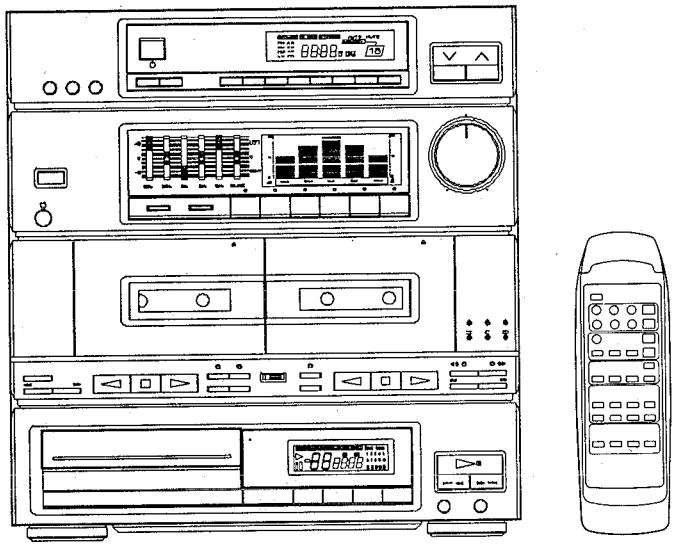
SAMSUNG Electronics

SERVICE MANUAL
MODEL: SCM-8900

HI-FI MUSIC CENTER WITH COMPACT DISC PLAYER



SPECIFICATION

GENERAL SECTION

Power Consumption	:	200W
Dimension	:	350(W) x 353(H) x 282(D)mm
Weight	:	9 Kg
Power source	:	See the label rating

RADIO SECTION

LW BAND

Frequency Range	:	146Hz ~ 290KHz
Usable Sensitivity	:	1000 μV
Signal to Noise Ratio	:	35dB

MW BAND

Frequency Range	:	522Hz ~ 1611KHz
Usable Sensitivity	:	500 μV
Signal to Noise Ratio	:	40 dB

SW BAND

Frequency Range	:	5.8MHz ~ 18MHz
Usable Sensitivity	:	100 μV
Signal to Noise Ratio	:	32 dB

FM BAND

Frequency Range	:	87.5MHz ~ 108MHz
Usable Sensitivity	:	6 μV
Signal to Noise Ratio	:	60 dB
Total Harmonic Distortion	:	0.5%
Separation (W/IHF A)	:	40 dB

TAPE SECTION(RECORD/PLAYBACK)

RECORD/PLAYBACK

Frequency Range	:	125Hz ~ 12.5KHz
Signal to Noise Ratio	:	40 dB
Separation	:	35 dB
Total Harmonic Distortion	:	3.0%
Erasing Effect	:	50 dB
Wow & Flutter	:	0.2%

COMPACT DISC PLAYER SECTION

Signal to Noise Ratio	:	70 dB
Total Harmonic Distortion	:	0.15%
Channel Separation	:	0.5 dB
D/A Conversion	:	16 bits

* *Design and specifications are subject to change upon improvement without prior notice.*
* *Frequency range in radio section can be a little different from the above in accordance with frequency step or region.*

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■ SAFETY PRECAUTION

1. CLASS 1 LASER PRODUCT

This compact disc player is classified as a CLASS 1 laser product.

2. LASER WARNING LABEL

The label shown below may be affixed or not according to country.

(UL)

This Product Compiles with DHHS Rules 21CFR, Sub chapter J.At date of Manufacture.

(CSA)

CERTIFIED ONLY TO CANADIAN ELECTRICAL CODE.

CERTIFIE EN VERTU DU CODE CANADIAN DE LELETRICITE SEULEMENT

(EU)

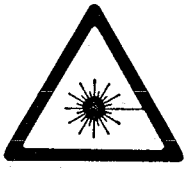
CLASS 1
LASER PRODUCT

Location : Enclosure back.

(SCAN)

ADVARSEL: USYNLIG LASERSTRÅLING VED ÅBNING, NÅR SIKKERHEDSAFBRYDERE ER UDE AF FUNKTION UNDGÅ UDSAETTELSE FOR STRÅLING.

(EU)



UL	:	Manufactured for U.S.A. Market.
CSA	:	Manufactured for Canadian Market.
EU	:	Manufactured for European Market
SCAN	:	Manufactured for Scandinavian Market.

Location : on the disc clamper or inner side of CD door or nearby CD chassis.

3. LASER BEAM WARNING

ADVERSEL — USYNLIG LASERSTRÅLING VED ÅBNING, NÅR SIKKERHEDSAFBRYDERE ER UDE AF FUNKTION. UNDGÅ UDSAETTELSE FOR STRÅLING.

VARNING — OSYNLIG LASERSTRÅLNING NÄR DENNA DEL ÄR ÖPPNAD OCH SPÄRR ÄR URKOPPLAD. STRALEN ÄR FARLIG.

VARITUS — LAITE SISÄLTÄA LASERDIODIN, JOKA LÄHETTÄÄ NÄKYMÄTÖNTA SILMILLE VAARALLISTA LASERSATEILYÄ.

CAUTION — INVISIBLE LASER RADIATION WHEN OPEN AND INTERLOCKS DEFEATED. AVOID EXPOSURE TO BEAM.

4. LASER DIODE SPECIFICATION (OPTICAL PICK-UP)

- o Material: AlGaAs
- o Wavelength: 760-800mm
- o Emission duration: Continuous
- o Laser Output: 0.2mW
  - * This output is the value measured at distance 1.6mm from the objective lens surface on the optical pick-up block.
- o Classification: CLASS 1

5. WARNING FOR SERVICING

WARNING: When servicing, do not approach the LASER exit with the eye too closely. In case it is necessary to confirm LASER beam emission, be sure to observe from a distance of more than 30cm from the surface of the objective lens on the optical pick-up block.

VARNING: När underhållningsarbeten utförs, närma dig försiktigt och se inte på laserutstrålningen på för nära häll. Ifall det är nödvändigt att betrygga laserstrålens utströmning. Var säker att kontrollera detta från ett avstånd av mer än 30cm (11.81 inch.) från den objektiva linsens yta på den optiska utsåndningspunkten.

ADVARSEL: Når repareringsarbejdet udfoeres, naerm dig forsigtigt og se ikke på laserudstrålingen på for naer hånd. I tilfaeldet at det er noedvaendigt at bestemme laserstrålens udstråling. Vaer sikker på kontrollere dette fra en afstand af mere end 30cm (11.81 inch.) fra den objektive linses overflade på den optiske udsendningspunkt.

VAROITUS: Silmiä on varottava viemästä liian läbeiie Laser-poistokanavaa huoiion aikana. Jos on välttämätöntä varmistaa Laser-Säteen päästö, pysyttels sitä tarkasteltaessa vähintään 30cm etäiyydellä optisen lukon objecktiivilinssin pinnasta.

■ SERVICING NOTE

1. Prevent shock hazard by unplugging power supply cord before opening cabinet.
2. Avoid repairing under direct sunshine and heat which may cause cabinet, transistor and IC to be transformed or misoperate.
3. Use a soft cotton swab moistened with warm water or neutral cleaner when parts of unit need to be cleaned.
4. When replacing parts with safety features built in, be sure to use specified parts with same specs only.
5. Avoid repairing the set near TV or any other magnetic forces.
6. Disconnect plug from wall socket during electric storm to reduce the risk of damage.
7. Be careful of electrostatic source when using control IC.
8. Be sure not to separate the pick-up from the unit.

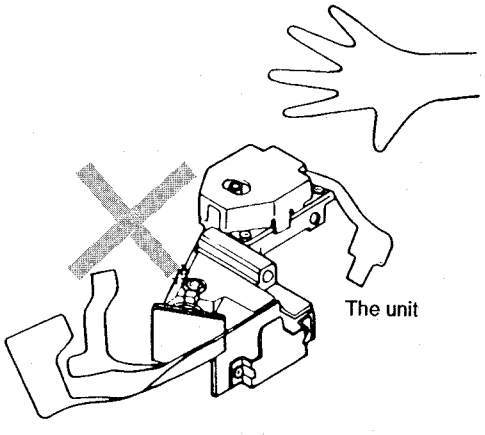
HANDLING THE OPTICAL PICK-UP

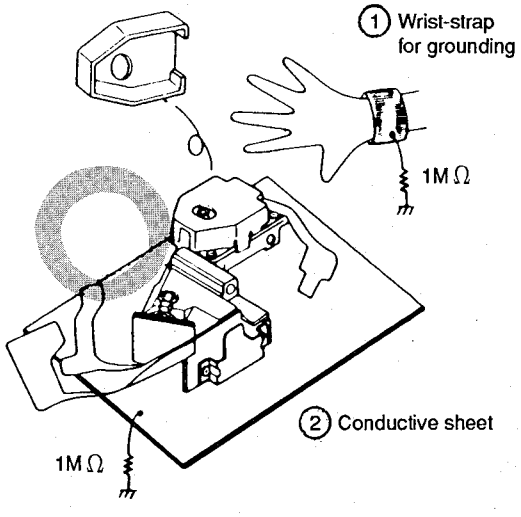
The laser diode in the optical pick up may suffer electrostatic breakdown because of potential static electricity from clothing and your body.

The following method is recommended.

1. Place a conductive sheet on the work bench (The black sheet used as wrapping for repair parts).
2. Place the set on the conductive sheet so that the chassis is grounded to the sheet.
3. Place your hands on the conductive sheet (This gives them the same ground as the sheet).
4. Remove the optical pick up block.
5. Perform work on top of the conductive sheet.
   Be careful not to let your clothes or any other static sources to touch the unit.

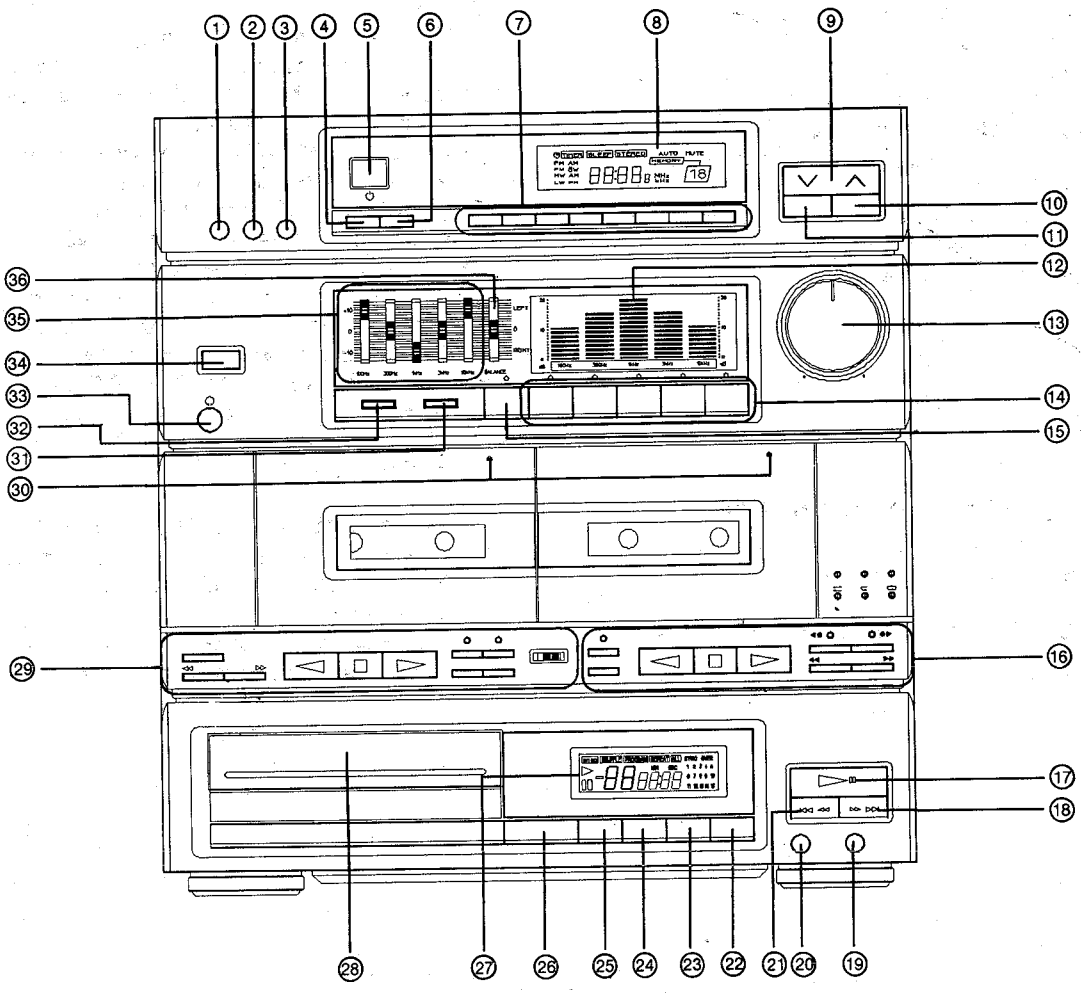
   * Be sure to put on a wrist strap grounded to the sheet.
   * Be sure to lay a conductive sheet made of copper etc. which is grounded to the table.





■ LOCATION OF CONTROLS

1. FRONT



1. TIMER ON BUTTON
2. CLOCK BUTTON
3. SLEEP BUTTON
4. AUTOSCAN BUTTON
5. REMOTE SENSOR
6. BAND BUTTON
7. PRESET STATION BUTTON
8. TUNER/TIMER DISPLAY
9. TUNING UP/DOWN BUTTON
10. MEMORY BUTTON
11. MODE (STEREO/MONO) BUTTON
12. 5 BAND EQ DISPLAY
13. VOLUME
14. FUNCTION SELECTOR BUTTON
15. MUTE BUTTON
16. B DECK
    STOP BUTTON (■)
    PLAY BUTTON (◀ or ▶)
    FAST FORWARD BUTTON (▶▶)
    REWIND BUTTON (◀◀)
    RECORD BUTTON (◀● or ●▶)
    RECORD MUTE BUTTON
    RECORD PAUSE BUTTON
17. PLAY/PAUSE BUTTON
18. F.SKIP/SEARCH BUTTON
19. SHUFFLE PLAY BUTTON
20. INTRO SCAN BUTTON
21. BACK.SKIP/SEARCH BUTTON
22. STOP/CLEAR BUTTON
23. PROGRAM BUTTON
24. REPEAT BUTTON
25. DISPLAY BUTTON
26. OPEN/CLOSE BUTTON
27. CD DISPLAY
28. CD DOOR
29. A DECK
    STOP BUTTON (■)
    PLAY BUTTON (◀ or ▶)
    FAST FORWARD BUTTON (▶▶)
    REWIND BUTTON (◀◀)
    LONG PLAY BUTTON
    AUTO REVERSE BUTTON
    CD SYNCHRO RECORD BUTTON
    HI-SPEEH DUBBING BUTTON
    NORMAL SPEED DUBBING BUTTON
    DOLBY NR ON/OFF SWITCH
30. A/B DECK DOOR EJECT BUTTON
31. SURROUND BUTTON
32. C.F.B.S BUTTON
33. HEADPHONE JACK
34. POWER BUTTON
35. 5 BAND GRAPHIC EQUALIZER
36. BALANCE

* How to set the current time.

(1) Turn the power on by pressing the POWER button.
(2) Press the CLOCK button, then the current time will be indicated.
(3) Hold the CLOCK button and at the same time press MEMORY/CHECK button twice.
The display should now be flashing.
(4) Using the TUNING DOWN/HOUR, UP/MIN buttons, enter the current time of day.
(5) Press the MEMORY/CHECK button, then the current time correction will be completed.
The display will now stop flashing and maintain current time.

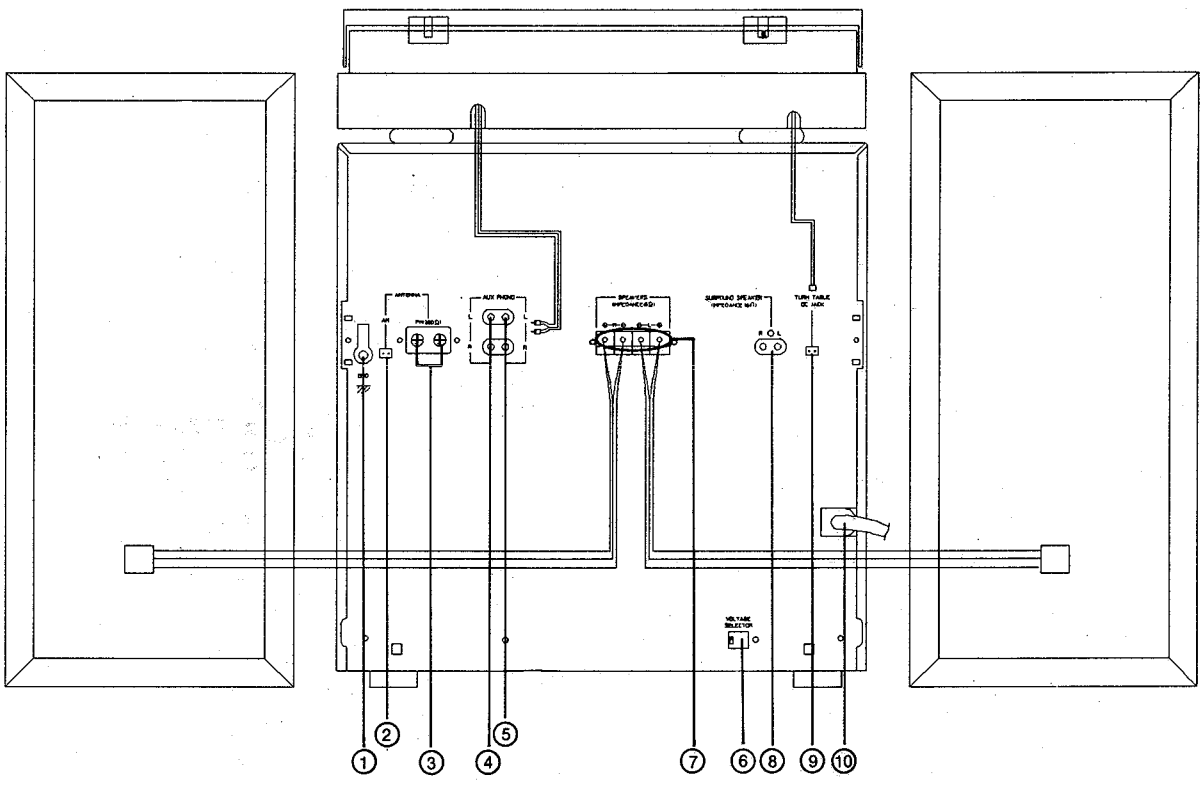
* How to set the timer operating time.

The TIMER function can be used to switch on the system automatically at a pre-set time.

(1) Press the CLOCK button once-the current time will be displayed.
(2) Press the MEMORY button again with MEMORY button on.
(3) release both buttons.
(4) Press the MEMORY button once again. The display will now commence to flash and TIMER will be displayed.
(5) Using the TUNING DOWN/HOUR, UP/MIN button sets the time that you desire.
(6) Press the MEMORY button twice and the display will revert to the current time of day.
(7) Select the TUNER function which you wish to commence at the programmed time-TUNER.
(8) Finally switch the system off with the POWER button. The system is then in the stand-by mode and will automatically switch on at the programmed time.
(9) Once programmed the timer action may be selected as required by pressing the TIMER ON button.
One press to switch on, a further press to switch off.
The display will indicate TIMER when the system is in the TIMER mode.

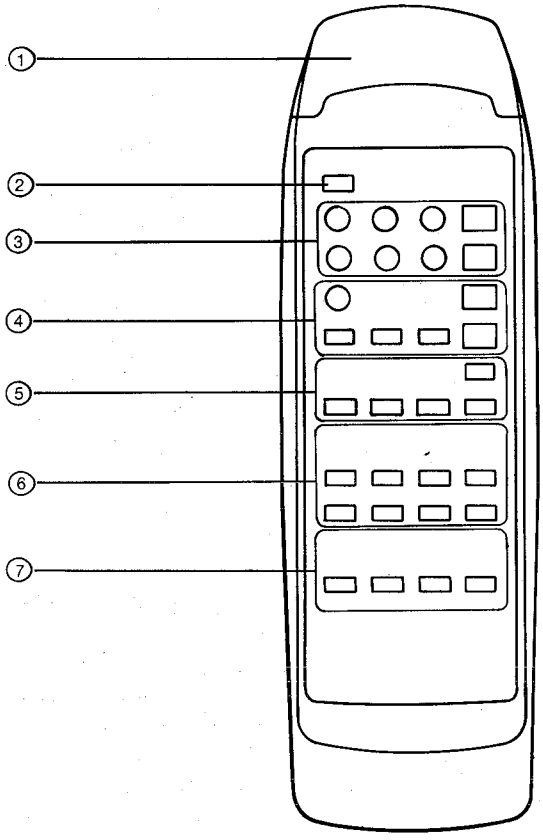
NOTE:
Each time TUNING DOWN/HOUR button is pressed for setting the current time the time advances by one hour. Pressing TUNING UP/MIN button advances the time by one minute.
The hour and minute counters will advance continuously when these buttons are held pressed down.

2. REAR



1. TURN TABLE GROUND TERMINAL
2. AM ANTENNA JACK
3. FM ANTENNA TERMINAL
4. AUX JACK
5. PHONO INPUT JACK
6. VOLTAGE SELECTOR (OPTIONAL)
7. SPEAKER TERMINAL
8. SURROUND SPEAKER JACK
9. TURN TABLE DC JACK
10. POWER CORD

3. REMOTE CONTROL



1. **INFARARED BEAM TRANSMIT WINDOW**
2. **POWER BUTTON**
3. **AMP SECTION**
   TUNER BUTTON
   PHONO BUTTON
   TAPE BUTTON
   CD BUTTON
   AUX BUTTON
   MUTE BUTTON
   VOLUME UP (+)/DOWN (—) BUTTON
4. **TUNER SECTION**
   SLEEP BUTTON
   TUNING UP (∧)/DOWN (∧) BUTTON
   BAND SELECT BUTTON
   PRESET UP (▲)/DOWN (▲) BUTTON
5. **A DECK SECTION**
   STOP (■) BUTTON
   REWIND (◀◀) BUTTON
   FAST FORWARD (▶▶) BUTTON
   PLAY (◀ or ▶) BUTTON
   F.PLAY : FORWARD PLAY BUTTON
   R.PLAY : REVERSE PLAY BUTTON
6. **B DECK SECTION**
   STOP (■) BUTTON
   REWIND (◀◀) BUTTON
   FAST FORWARD (▶▶) BUTTON
   PLAY (◀ or ▶) BUTTON
   F.PLAY : FORWARD PLAY BUTTON
   R.PLAY : REVERSE PLAY BUTTON
   RECORD (◀● or ●▶) BUTTON
   F.REC : FORWARD RECORD BUTTON
   R.REC : REVERSE RECORD BUTTON
   RECORD MUTE BUTTON (●)
7. **CD SECTION**
   PLAY/PAUSE (▶▮▮) BUTTON
   STOP (■) BUTTON
   SKIP DOWN BUTTON (SKIP, ▮◀◀)
   SKIP UP BUTTON (SKIP, ▶▶▮)

■ DISASSEMBLY INSTRUCTION

1. TOP CABINET & REAR COVER

1) Press CD OPEN/CLOSE button.
2) Remove DOOR GUIDE. (FIG. 4)
3) Release 10 screws (1).
4) Remove TOP CABINET.
5) Release 17 screws (2).
6) Remove REAR COVER.

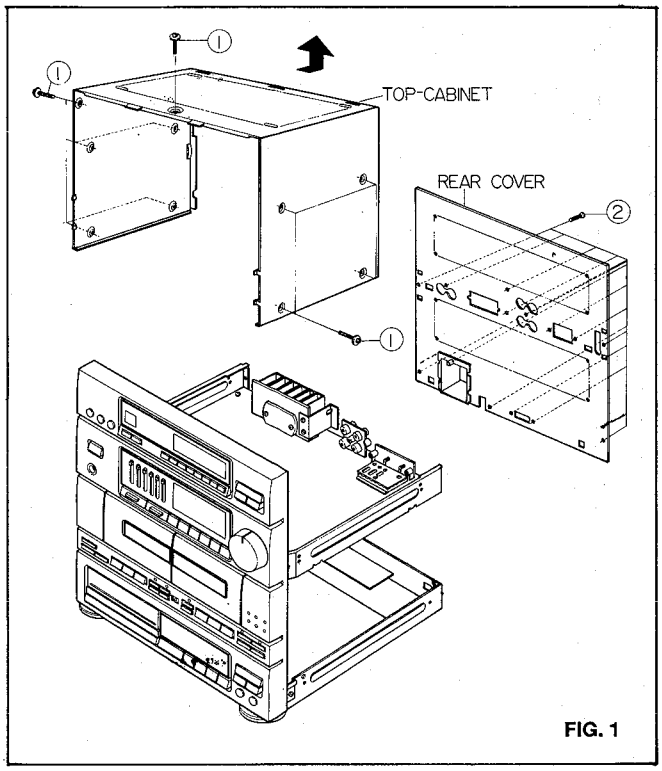


FIG. 1

2. MAIN PCB

1) Release 4 screws (①).
2) Remove MAIN PCB.

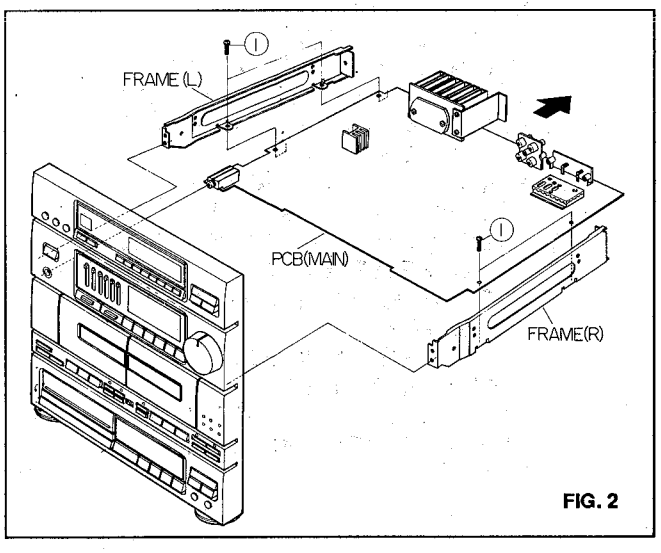


FIG. 2

3. CASSETTE DECK ASSEMBLY

1) Press STOP/EJECT button.
2) Press TAP (direction A) and pull out CASSETTE DOOR.
3) Release screws (①).

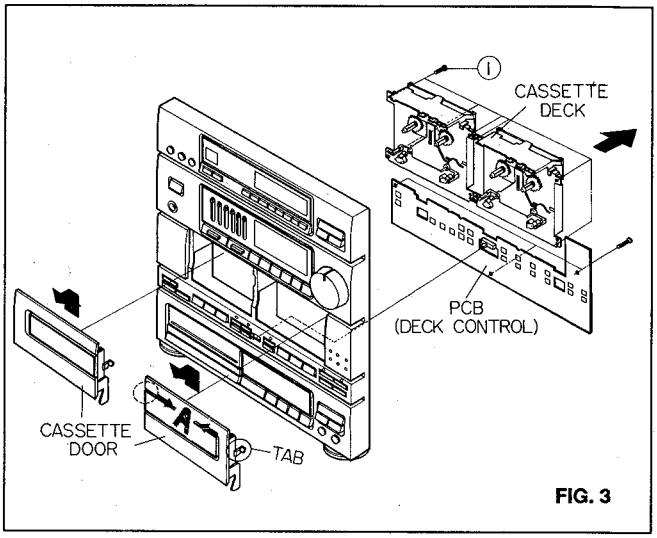


FIG. 3

4. CD DECK ASSEMBLY

1) Release 4 screws (①).
2) Remove CD DECK mechanism.

* HOW TO DISASSEMBLE DISC TRAY. (In case of power failure)

(A) Release 1 screw (②).
(B) Lift TRAY COVER UP and remove the TRAY adjusting gear at the bottom.

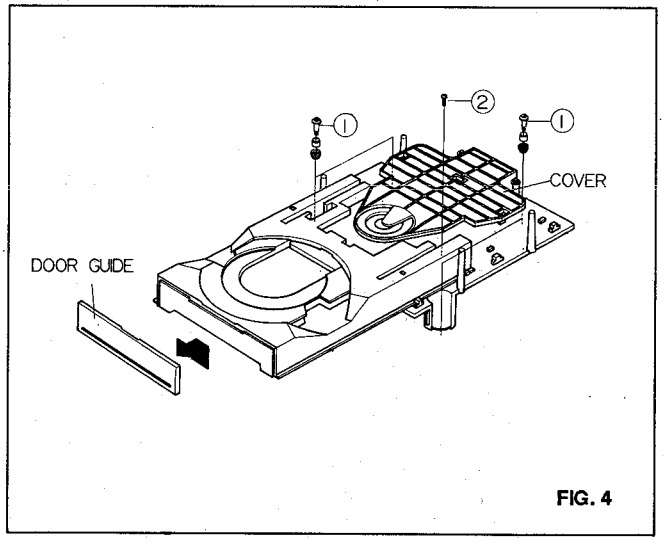


FIG. 4

■ BASIC CIRCUIT OPERATION

1. TUNER SECTION

* H : HIGH, L : LOW
* I : INPUT, O : OUTPUT

- LC7232-8380 (DTS PLL IC) : UIC1

PIN No.	PIN NAME	I/O	OPERATION	ACTIVE
1	XIN	I	Crystal oscillating port. (4.5MHz)	—
80	XOUT	O	Crystal oscillating port. (4.5MHz)	—
2, 79	TEST1, 2	I	Connect to GND	—
3	REMOCON	I	Remote control input port. If it is open, it may cause Remote Control to maloperate.	L
4	$\overline{\text{STEREO}}$	I	LOW : Stereo indicator on	L
7	CE2	O	System control	L
8 – 11	$\overline{\text{FM}}$, $\overline{\text{MW}}$, $\overline{\text{LW}}$, $\overline{\text{SW}}$	O	Band power convert port. CD Remote control signal port.	L
12	VR UP	O	If volume up signals are input, it outputs high voltage.	H
13	VR DOWN	O	If volume down signals are input, it outputs high voltage.	H
14	MO/ST	O	Mono stereo selection port.	H
15 ~17	CE, DO, CLK	O	LC7821 control port. (serial data line)	H, H, ⊥
18	IF CNT	O	IF signal output port. If low voltage is input to SD port (LA1851N) during auto search, it changes from low to high.	H
19	NARROW	O	CD remote control signal port.	H
20	POWER OUT	O	Power control port.	H
21	$\overline{\text{A MUTE}}$	O	Audio mute port.	L
22	STB	O	DATA STROBO port of LC74HC375.	H
23 – 26	T7 – T4	O	Transmit data to LC74HC375 (TAPE, TUNER, AUX,PHONO)	H
27 – 30	T3 – T0	O	Key scan output signal.	H
32 – 35	K3 – K0	I	Key input signal.	H
5 – 6	K5, K4	I	Diode matrix input signal.	H
63 – 36	S1 – S28	O	LCD Segment drive port.	—
65, 64	COM1, 2	O	LCD Common drive port.	—
67	$\overline{\text{HOLD}}$	I	L—Back up mode.	L
69	$\overline{\text{SD}}$	I	Broadcast receiving port.	L
70	HCTR	I	FM IF Signal input port.	—
71	LCTR	I	AM IF Signal input port.	—
72	SNS	I	Transmit data to LC7821, 74HC375	H
74, 75	FM IN, AM IN	I	Input local OSC signal.	—
78, 77	EO1, 2	O	Phase comparison output signal.	
66	INT	I	Remote control input port.	
31, 73	VDD			
76	Vss			
68	$\overline{\text{RES}}$		LOW : All reset	

2. TAPE SECTION

- LC66508-4517 (μ-COM IC) : UDIC 1

PIN No.	PIN NAME	I/O	OPERATION	ACTIVE	
				H	L
1	$\overline{\text{REC}}$	O	Rec, dubbing : L		REC DUBBING
2	DUB	O	Dubbing : H	○	
3	$\overline{\text{H/SP}}$	O	Hi-speed dubbing : L	NOR SPEED	HI SPEED
4	A play	O	A deck play : H	○	

<LC66508 : μ-COM>

PIN No.	PIN NAME	I/O	OPERATION	ACTIVE	
				H	L
5	CLK	I/O	Remote control operation port		
6	Data	I/O	Remote control operation port		
7	CE	I/O	Remote control operation port		
8	Power off	I	Power on : H, Power off : L	POWER ON	POWER OFF
9-11	T.SENS FF/REW play	I	A deck operation input port		A DECK OPERATION
12-16	F, REC/R REC T.SENS FF/REW. PLAY	I	B deck operation input port		B DECK OPERATION
17-18	TSP, TSR (OPTION)	I	Timer sw play : B deck play Timer sw rec : B deck REC	PLAY REC	
19	Rec mute	O	Rec-mute signal output	REC MUTE ON	REC MUTE OFF
20	Line mute	O	Line-mute signal output	LINE MUTE ON	LINE MUTE OFF
21	Repeat	O	1 music repeat indicator operation output		
22	Rec mute	O	Rec mute indicator operation output		
23-24	NOR/SPEED (option) HI/SPEED (option)	O O	Nor/speed indicator operation output Hi/speed indicator operation output		LED OPTION
25	P1Ao	O	A deck playback plunger operation port	PLAY REC	
26	P2Ao	O	A deck FF/REW plunger operation port	FF/REW	
27	P1Bo	O	B deck playback plunger operation port	PLAY REC	
28	P2Bo	O	B deck FF/REW plunger operation port	FF/REW	
29	$\overline{INH}$	I/O	Lcd control port		
30-31	Test, Vss		GND		
32-33	OSC1, OSC2		4MHz OSC port		
34	$\overline{RES}$		Reset		
35-37	CE, CLK,Data		Lcd control		
38-45	REW, FF, R play, F play (B deck) REW, FF, R play F play (A deck)	O	B deck operation display : output port (option) A deck operation display : output port (option)		
46-54, 56	KEY MATRIX	I	KEY MATRIX INPUT		
55	AMPS IN	I	AMPS BLANK SIGNAL INPUT	H	
57	QUICK REVERSE B	I	B DECK LEADER SIGNAL INPUT		
58	QUICK REVERSE A	I	A DECK LEADER SIGNAL INPUT		
59	AUTO STOP B	I	B DECK AUTOSTOP SIGNAL INPUT		

<LC66508 : μ-COM>

PIN No.	PIN NAME	I/O	OPERATION	ACTIVE	
				H	L
60	AUTO STOP A	I	A DECK AUTOSTOP SIGNAL INPUT		
61	MAO	O	A DECK MOTOR OPERATION SIGNAL OUTPUT	MOTOR OPERATION	
62	MBO	O	B DECK MOTOR OPERATION SIGNAL OUTPUT	MOTOR OPERATION	
63	AMPS OUT	O	AMPS OPERATION SIGNAL OUTPUT		
64	VDD		VDD		

3. CD SECTION

1) KS5990/KS59910 (Digital Signal Processor) : IC401

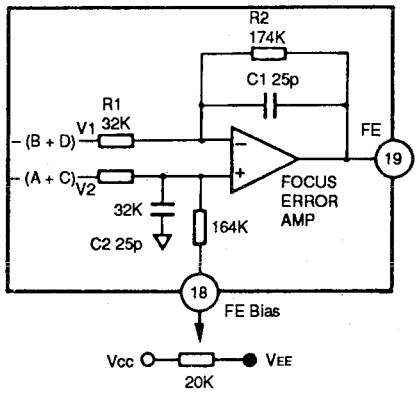
* I/O : INPUT/OUTPUT

Pin No.	Symbol	I/O	Description
1	SMEF	O	Pin 1 output is switched constant when output filter of the spindle motor is energized.
2	SMON	O	ON/OFF control for spindle motor.
3	SMPD	O	Spindle motor drive. Provides rough control during CLV-S mode and phase control during CLV-P mode.
4	SMSD	O	Spindle motor drive. Controls speed during CLV-P mode.
5	EFMZ	I	EFM signal from RF amplifier.
6	EFMO	O	Controls slice level of the EFM signal.
7	LOCK	O	The output of pin 7 reflects the status of the GFS signal which is sampled at PBFR/16. When the GFS signals is "H", but, when the signal has remained "L" for at least 8 samples, the output of pin 7 is "L".
8	VCOO	O	VCO output. The frequency is f = 8.6436MHz, when locked by the DBFR signal.
9	VCOI	I	VCO input.
10	TEST	I	(0V).
11	PHAS	O	The output of Pin11 provides phase comparison of EFM signal and VCO/2.
12	Vss	—	GND (0V).
13	MCK	I	Pin 13 provides serial transmission clock from the CPU. Data is latched on the leading edge of the clock.
14	MLT	I	Pin 14 provides latch input from the CPU. 8-bit shift register data (serial data received from the CPU) is latched in each of the registers.
15	MDAT	I	Serial data from the CPU.
16	XRST	I	System reset ("L").
17	TRCK	I	Tracking pulse input.
18	$\overline{\text{ISTAT}}$	O	Output reflecting internal condition as designated by address.
19	MUTE	I	Muting input. MUTE is "L" when ATTM of internal register A is "L" (normal condition). MUTE is "H" when meting condition is set.
20	SQOK	O	Output the results CRC check of subcode Q.
21	SBCK	I	Clock input for subcode serial output.
22	SDAT	O	Serial output of subcode.
23	SQDT	O	Output of subcode Q.
24	S0S1	O	Output of subcode sync S0 + S1.
25	SQCK	I/O	Clock for reading subcode Q.
26	SQEN	I	Input for selecting SQCK (L; SQCK is output, H; SQCK is input)
27	SRAM	I	SRAM is "H" in Normal, SRAM is "L" when system is testing.
28	LKFS	O	Display output for frame sync lock status.
29	DB8	I/O	Data pin for external RAM. DATA8 (MSB) in test mode. Hi-Z in normal
30	DB7	I/O	Data pin for external RAM. DATA7 in test mode. Hi-Z in normal

Pin No.	Symbol	I/O	Description
31	DB6	I/O	Data pin for external RAM. DATA6 in test mode. Hi-Z in normal
32	DB5	I/O	Data pin for external RAM. DATA5 in test mode. Hi-Z in normal
33	V_{DD}	—	Power supply (+ 5V).
34	DB4	I/O	Data pin for external RAM. DATA4 in test mode. Hi-Z in normal
35	DB3	I/O	Data pin for external RAM. DATA3 in test mode. Hi-Z in normal
36	DB2	I/O	Data pin for external RAM. DATA2 in test mode. Hi-Z in normal
37	DB1	I/O	Data pin for external RAM. DATA1 (LSB) in test mode. Hi-Z in normal
38	AD01	O	(LSB)
39	AD02	O	In normal mode (TEST = 'L', SRAM = 'H'), these pins are High impedance (Hi-Z) In test mode (TEST = 'H', SRAM = 'L'), these pins are Output address of external RAM
40	AD03	O	
41	AD04	O	
42	AD05	O	
43	AD06	O	
44	AD07	O	
45	AD08	O	
46	AD09	O	
47	AD10	O	
48	AD11	O	(MSB)
49	$\overline{WE}$	I/O	In normal mode, this is WE output. In test mode, write enable input.
50	$\overline{CE}$	I/O	In normal mode, this is CE output. In test mode, chip enable input.
51	4MCK	O	Divider output for crystal. f = 4.2336MHz
52	Vss	—	GND (0V)
53	XIN	I	Input to crystal oscillator circuit. Depending on the mode the frequency is either f = 8.4672 or 16.9344MHz.
54	XOUT	O	Output from crystal oscillator circuit. Depending on the mode the frequency is either f = 8.4672 or 16.9344MHz.
55	SEL1	I	Mode selection input 1.
56	SEL2	I	Mode selection input 2.
57	SEL3	I	Mode selection input 3.
58	SEL4	I	Mode selection input 4. Code switch input for audio data output. 2's complement output when "L", offset binary output when "H".
59	SEL5	I	Mode selection input 5. Code switch input for audio data output. Serial output when "L", parallel output when "H".
60	APTR	O	Output for aperture compensation. "H" when R-ch.
61	APTL	O	Output for aperture compensation. "H" when L-ch.
62	C1F1	O	Monitor output reporting status of error correction for C1 decoder. When SEL5 = 'L', DA01 (LSB of parallel audio data) is output when SEL5 = 'H'.
63	C1F2	O	Monitor output reporting status of error correction for C1 decoder when SEL5 = 'L', DA02 is output when SEL5 = 'H'.
64	C2F1	O	Monitor output reporting status of error correction for C2 decoder when SEL5 = 'L', DA03 is output when SEL5 = 'H'.
65	C2F2	O	Monitor output reporting status of error correction for C2 decoder when SEL5 = 'L', DA04 is output when SEL5 = 'H'.
66	C2FL	O	When SEL5 = 'L', output of status condition. C2FL is set 'H' when the C2 sequence. Presently being corrected becomes impossible to correct. DA05 is output when SEL5 = 'H'.
67	C2PO	O	Display output of the C2 pointer when SEL5 = 'L', DA06 is output when SEL5 = 'H'.

Pin No.	Symbol	I/O	Description
68	XTFR	O	When SEL5 = 'L', output of read frame dock which is 7.35KHz of the crystal system. DA07 is output when SEL5 = 'H'.
69	PBFR	O	When SEL5 = 'L', output of write frame clock which is 7.35KHz when locked by the crystal system. DA08 is output when SEL5 = 'H'.
70	$\overline{PBCK}$	O	When SEL5 = 'L', output of VCO/2 (f = 4.3218MHz when locked by the EFM signal). DA09 is output when SEL5 = 'H'.
71	FSDW	O	When SEL5 = 'L', output for unprotected frame sync patterns. DA10 is output when SEL5 = 'H'.
72	ULKFS	O	Output for display of status of frame sync protection when SEL5 = 'L', DA11 is output when SEL5 = 'H'.
73	V_{DD}	—	Power supply (+ 5V).
74	$\overline{JIT}$	O	When SEL5 = 'L', output for display of either RAM overflow or underflow for +4 frame jitter absorption. DA12 is output when SEL5 = 'H'.
75	ZWDCK	O	When SEL5= 'L', output for strobe signal (352.8KHz when DF is ON, 176.4KHz when DF is OFF). DA13 is output when SEL5 = 'H'.
76	$\overline{BLCK}$	O	When SEL5 = 'L', inverse output of BLCK. DA14 is output when SEL5 = 'H'.
77	BLCK	O	When SEL5 = 'L', bit clock output (4.2336MHz when DF is ON, 2.1168MHz when DF is OFF) DA15 is output when SEL5 = 'H'.
78	DATA	O	Serial data output of audio signal when SEL5 = 'L'. DA16 is output when SEL5 = 'H'.
79	WDCK	O	Strobe signal output. Output is 176.4KHz when DF is on. Output is 88.2KHz when DF is off.
80	CHCK	O	Strobe signal output. Output is 88.2KHz when DF is on. Output is 44.1KHz when DF is off..

2) FOCUS ERROR AMPLIFIER (KA9201) : IC301

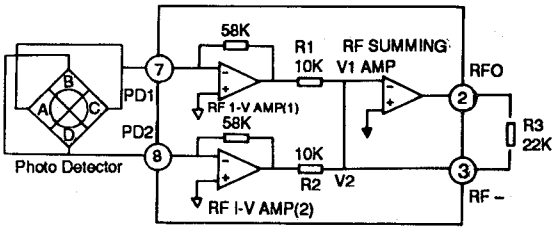


The Focus Error AMP is the difference between RF I-V AMP (1) output (A + C) and RF I-V AMP(2) output (B + D). This two [–(A + C), –(B + D)] signals are each applied to the (–) and (+) input of Focus Error AMP.
As the result of differential voltage, Focus Error signal is appeared at FE pin (pin 19).
This FE output voltage (low frequency) become [(A + C) – (B + D)], as follow.

V_{FE} = R2/R1* (V2–V1)
= 5.4 (V2–V1)

The focus error voltage is directed to the focus servo circuit, to maintain optimum focusing at all times.

3) RF AMPLIFIER (KA9201) : IC301

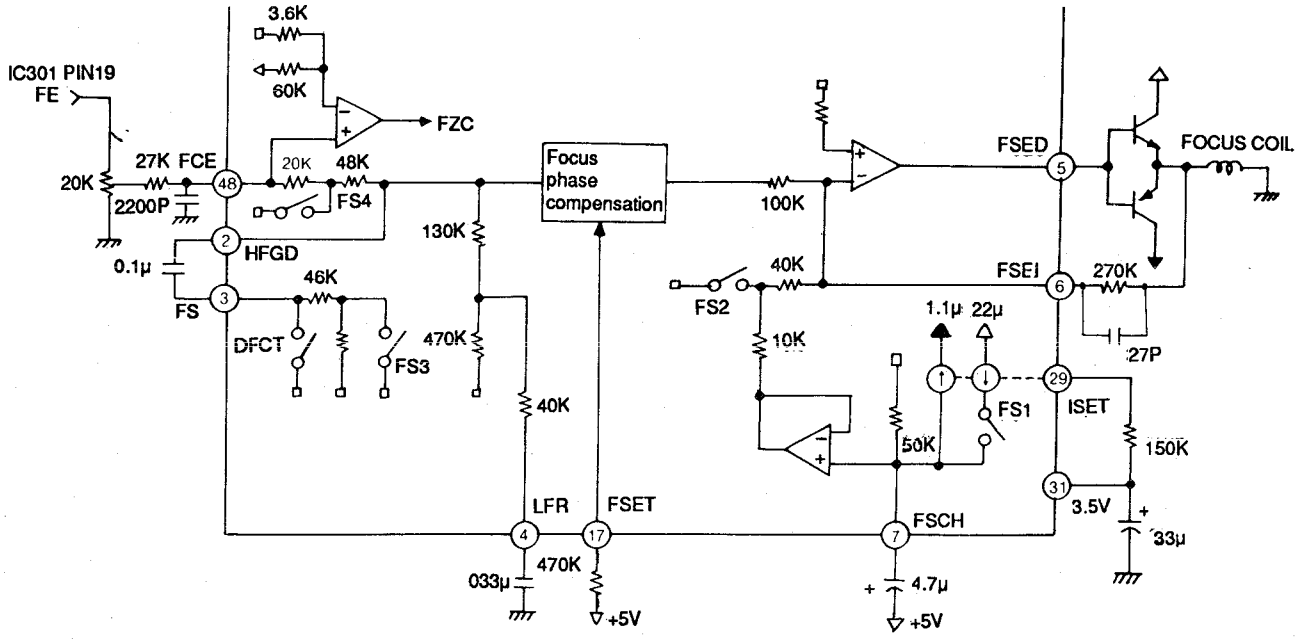


RF I-V AMP(1) and RF I-V AMP(2) are converted into voltage from current signal of PD1 (A + C) and PD2 (B + D) through the 58Kohm internal resistor. Furthermore, it is added in RF summing amplifier, this signal (A + B + C + D) is output at RFO (pin 2).
The RF output voltage (low frequency) is as follow.

V_{RF} = –R3* (iPD1 + iPD2)
= –R3* (V1/R1 + V2/R2)
= –22K* (V1/10K + V2/10K)
= –2.2* (V1 + V2)

4) FOCUS SERVO SYSTEM (KA830) : IC201

The below is a block diagram of the focus servo system.
When FS3 is switched on, the high frequency gain can be reduced by forming a low frequency time constant through a capacitor connected across pins 2 and 3 and the internal resistor.
The capacitor across the pin 4 and GND has a time constant to raise the low frequency usually playback condition.
The peak frequency of the focus phase compensation is inversely proportional to the resistor connected to pin 17 (about 1. 2KHz when the resistor is 470 kΩ)



The focus search peak becomes about ± 1.1 Vp-p with above constant. The peak is inversely proportional to the resistor connected across the pins 29 and 31. However, when this resistor is varied, the peaks of track jump and sled kick also vary.
The FZC comparator invert input is set to 5.7% of the difference between the reference voltage Vcc and Vc (Pin 1) : 5.7% x (Vcc – Vc).

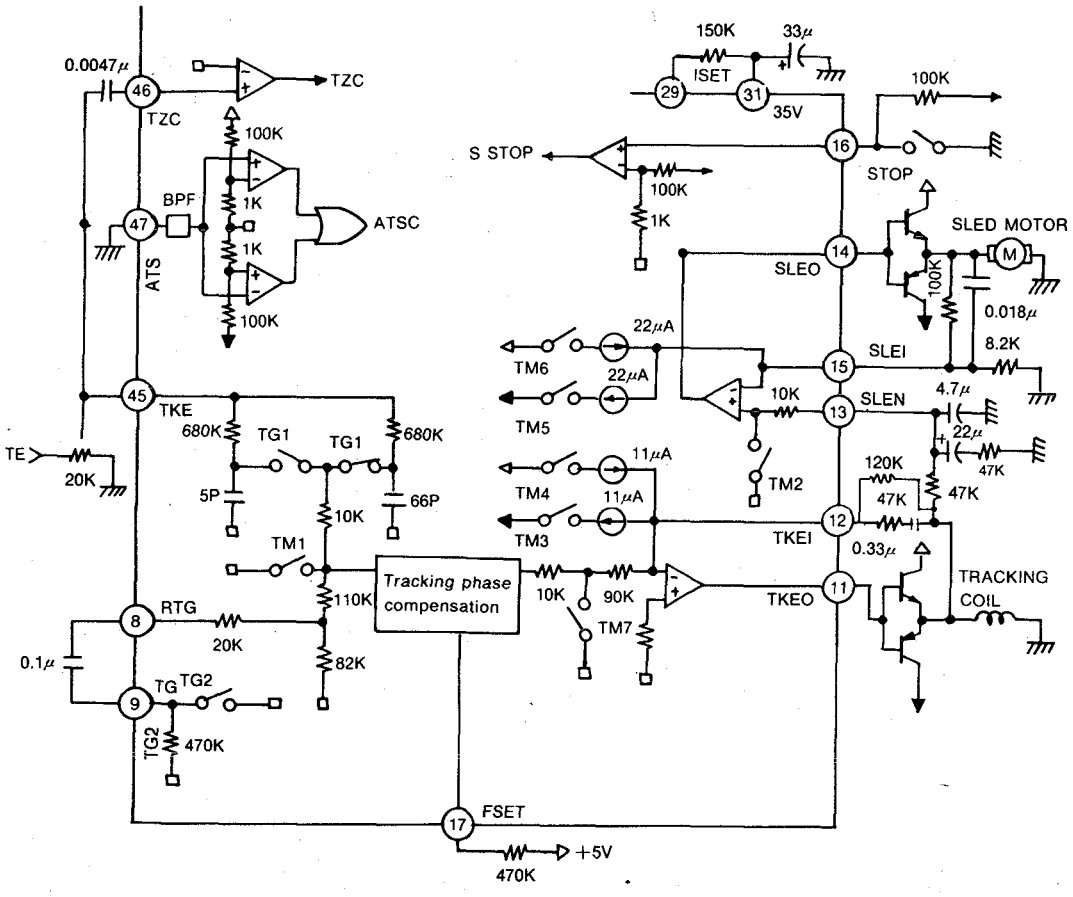
5) TRACKING SLED SERVO SYSTEM (KA830) : IC201

The below is a block diagram of the tracking sled servo system.

The capacitor across pins 8 and 9 has a time constant to lower the high frequency when TG2 is switched off. The tracking phase compensation peak frequency is inversely proportional to the resistor connected to pin 17 (about 1.2KHz when the resistor is 470KΩ).

For a tracking jump in the FWD or REV direction, TM3 or TM4 are set to ON. At this time, the peak voltage fed to the tracking coil is determined by the TM3 and TM4 current values and the feedback resistor from pin 12. That is:

Track jump peak voltage = TM3 (TM4) current value x feedback resistor value



The FWD or REV sled kick is done by setting TM5 or TM6 ON. At this time, the peak voltage added to the sled motor is determined by the TM5 or TM6 current value and the feedback resistor from pin 15.

Sled jump peak voltage = TM5 (TM6) current value x feedback resistor value

Each SW current value is determined by the resistor connected to pins 29 and 31.

When the resistor is at about 150KΩ ,

TM3 or TM4 is + 11 μA and TM5 or TM6 is + 22 μA.

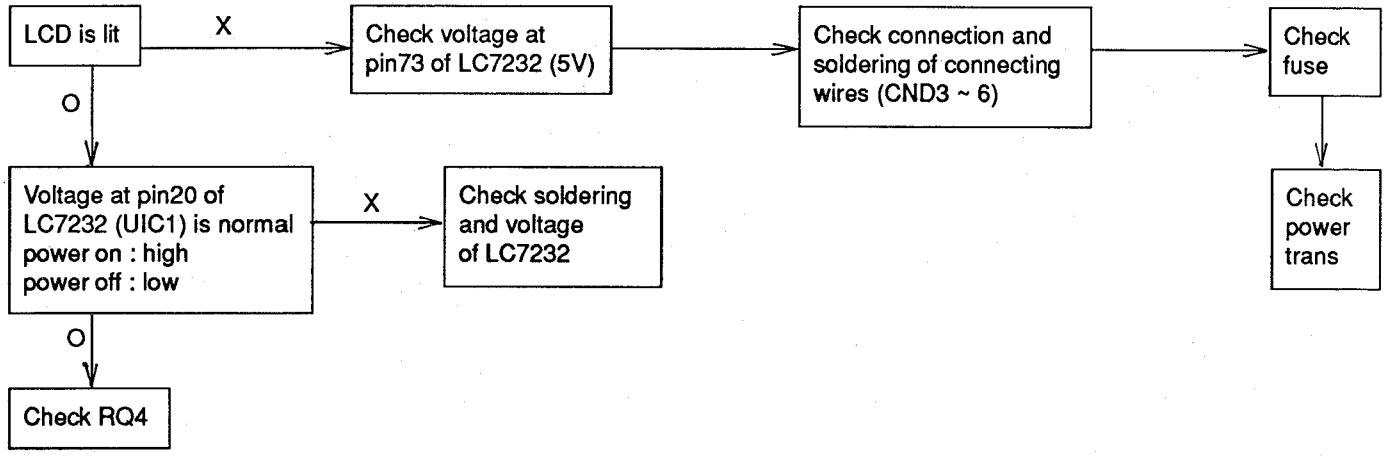
This current value is almost inversely proportional to the resistor, variable within a range of about 5 to 40 μA for TM3.

STOP is the ON/OFF detection signal for the limit SW or the sled motor's innermost circumference.

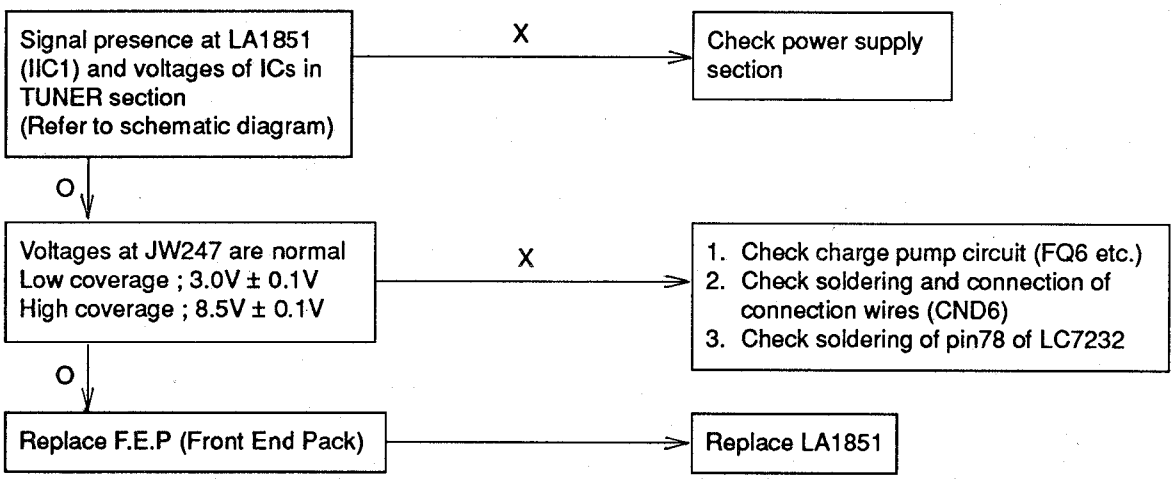
■ TROUBLE SHOOTING

1. MAIN

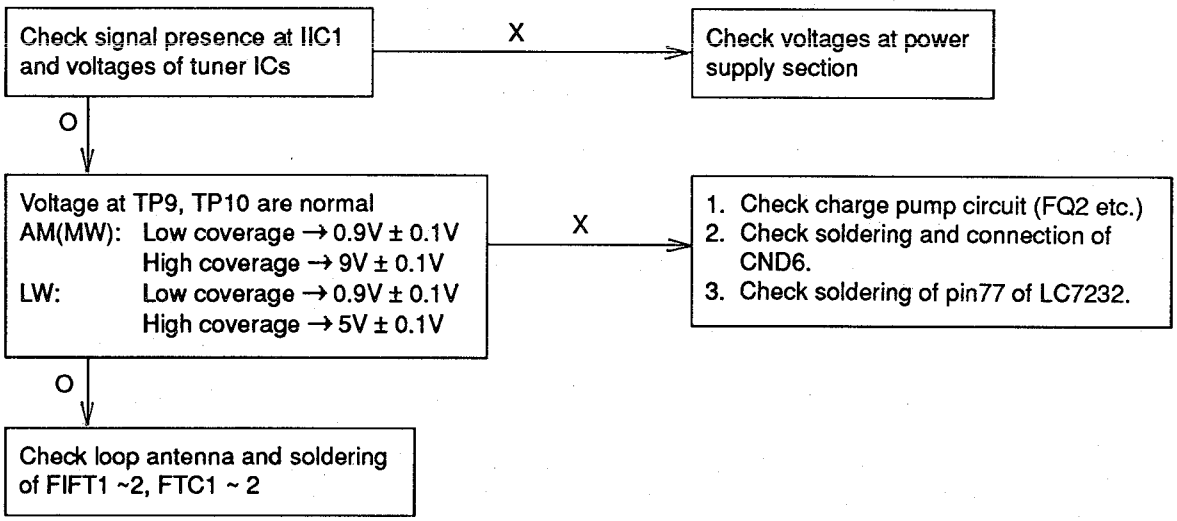
1) POWER PROBLEM



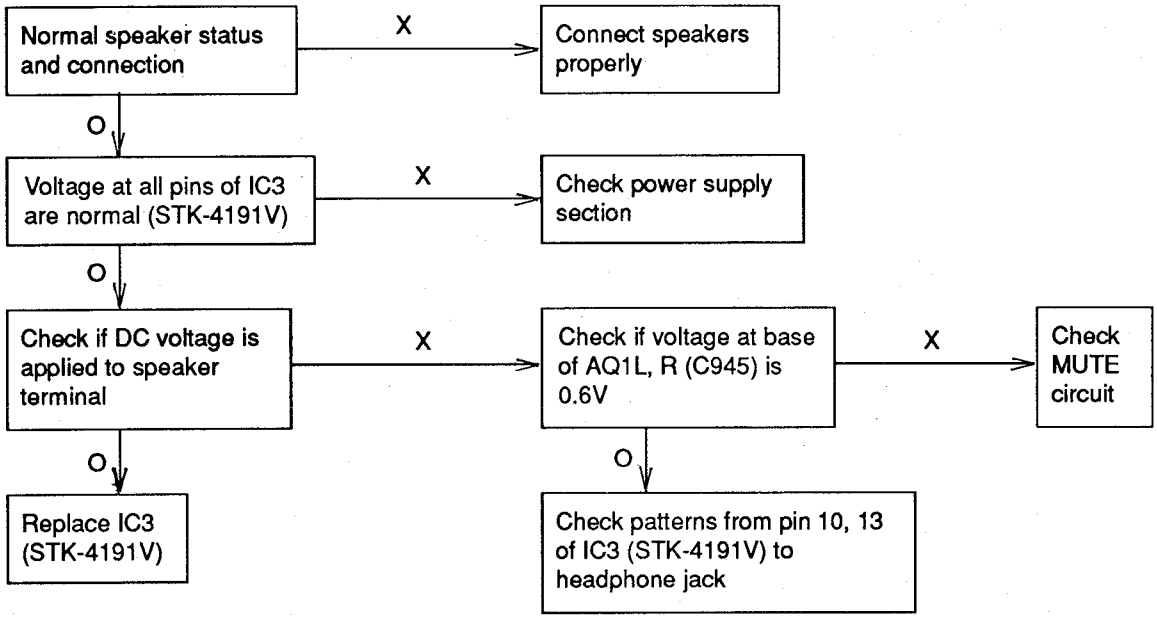
2) NO AUDIO ON FM MODE


Signal presence at LA1851 (IIC1) and voltages of ICs in TUNER section
(Refer to schematic diagram)
X
Check power supply section
O
Voltages at JW247 are normal
Low coverage ; 3.0V ± 0.1V
High coverage ; 8.5V ± 0.1V
X
1. Check charge pump circuit (FQ6 etc.)
2. Check soldering and connection of connection wires (CND6)
3. Check soldering of pin78 of LC7232
O
Replace F.E.P (Front End Pack)
Replace LA1851

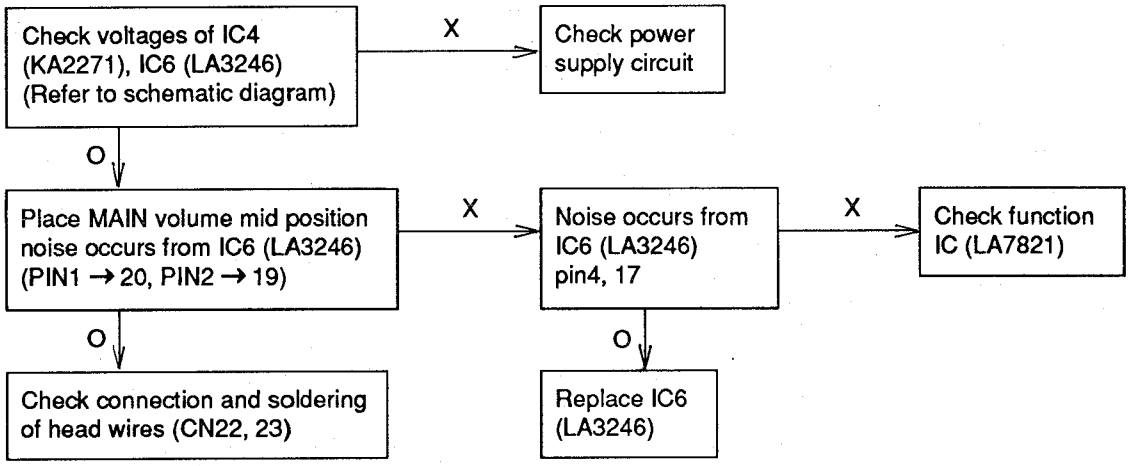
3) NO AUDIO ON AM


Check signal presence at IIC1 and voltages of tuner ICs
X
Check voltages at power supply section
O
Voltage at TP9, TP10 are normal
AM(MW): Low coverage → 0.9V ± 0.1V
High coverage → 9V ± 0.1V
LW: Low coverage → 0.9V ± 0.1V
High coverage → 5V ± 0.1V
X
1. Check charge pump circuit (FQ2 etc.)
2. Check soldering and connection of CND6.
3. Check soldering of pin77 of LC7232.
O
Check loop antenna and soldering of FIFT1 ~2, FTC1 ~ 2

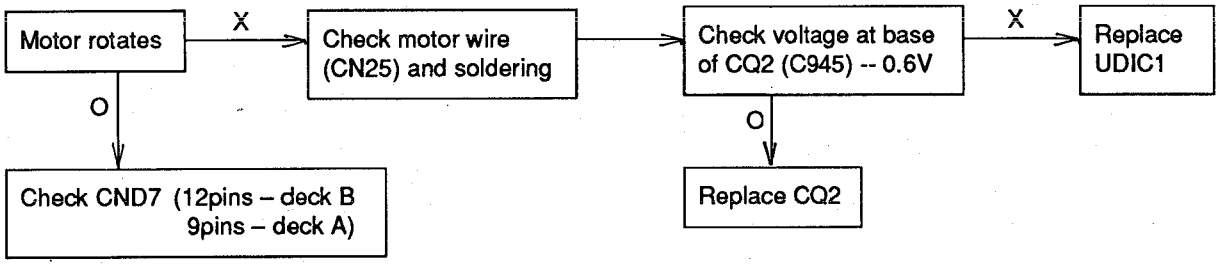
4) AUDIO OUTPUT PROBLEM



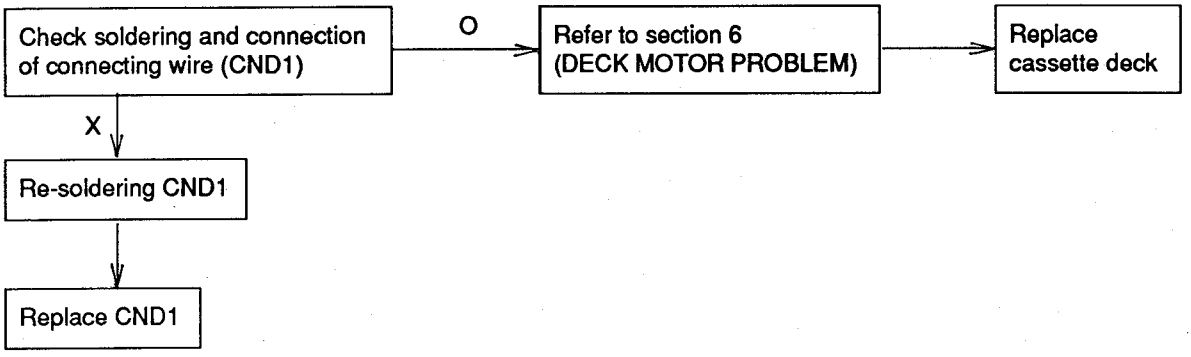
5) TAPE NOT PLAYING


Check voltages of IC4 (KA2271), IC6 (LA3246) (Refer to schematic diagram)
X
Check power supply circuit
O
Place MAIN volume mid position noise occurs from IC6 (LA3246) (PIN1 → 20, PIN2 → 19)
X
Noise occurs from IC6 (LA3246) pin4, 17
X
Check function IC (LA7821)
O
Check connection and soldering of head wires (CN22, 23)
O
Replace IC6 (LA3246)

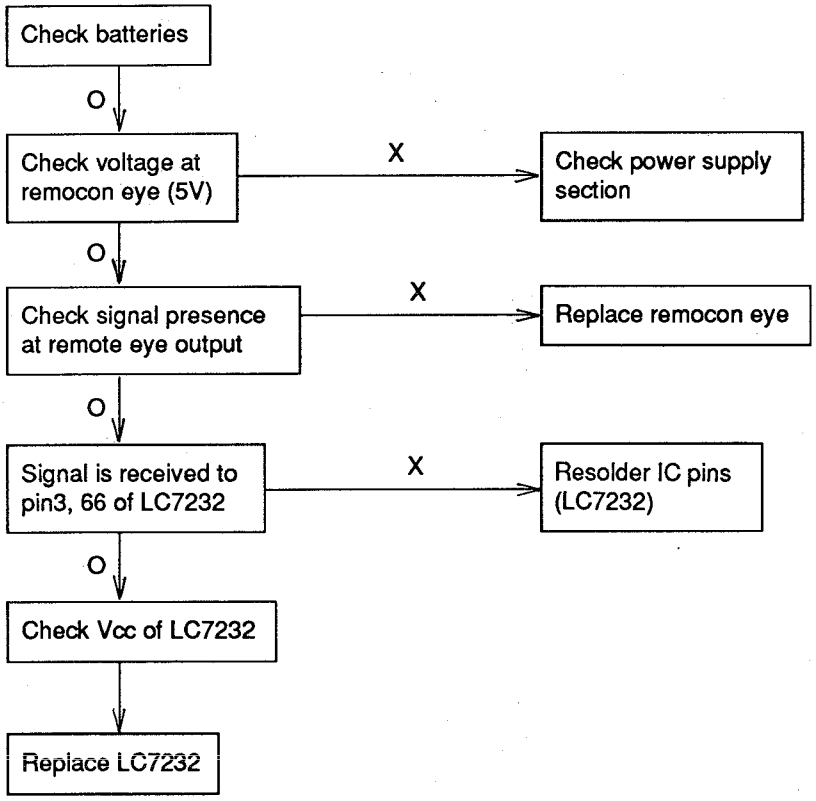
6) DECK MOTOR PROBLEM

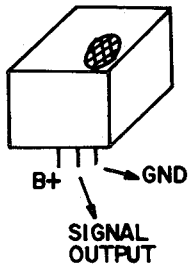


7) CASSETTE DECK PROBLEM



8) REMOTE CONTROL PROBLEM

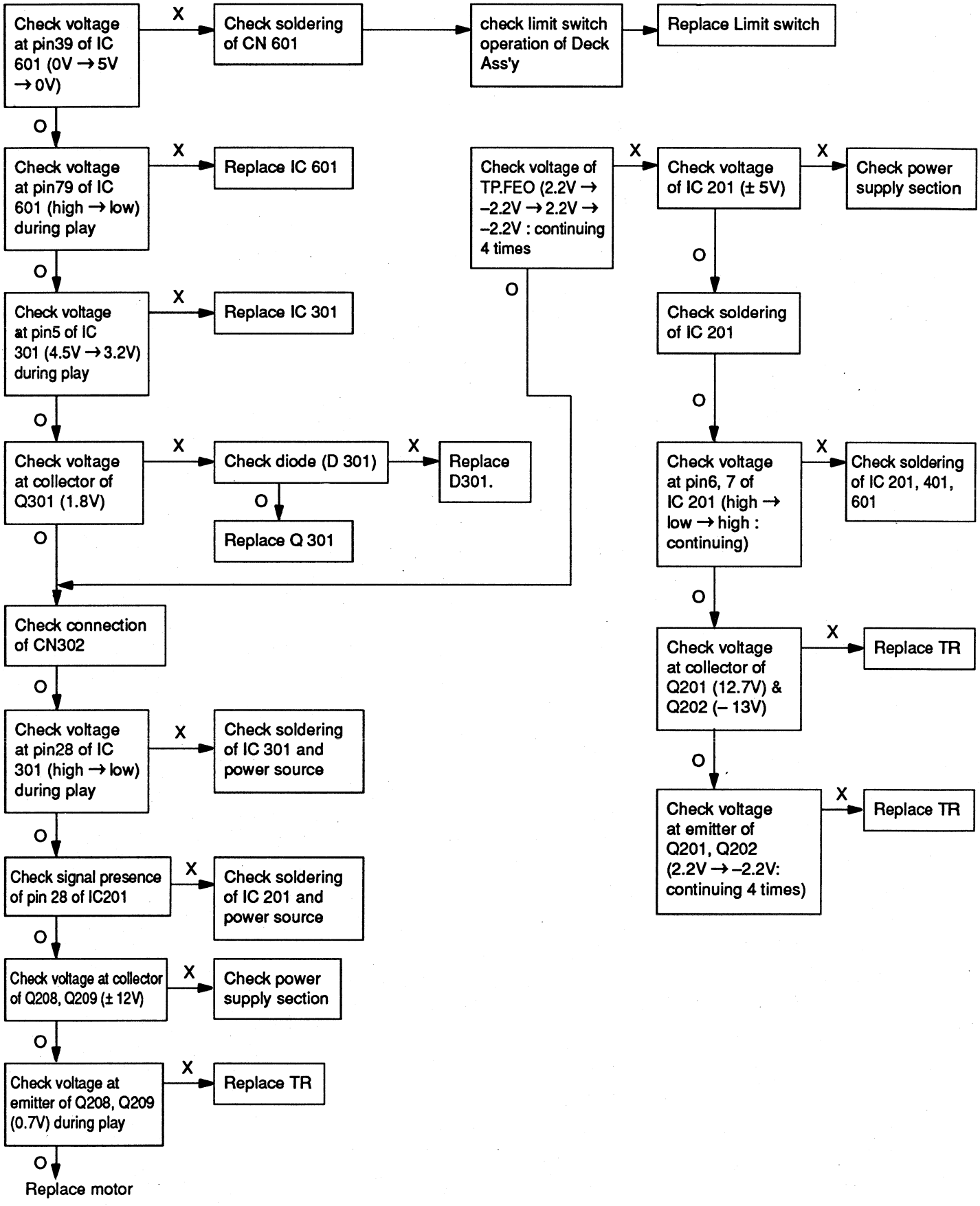




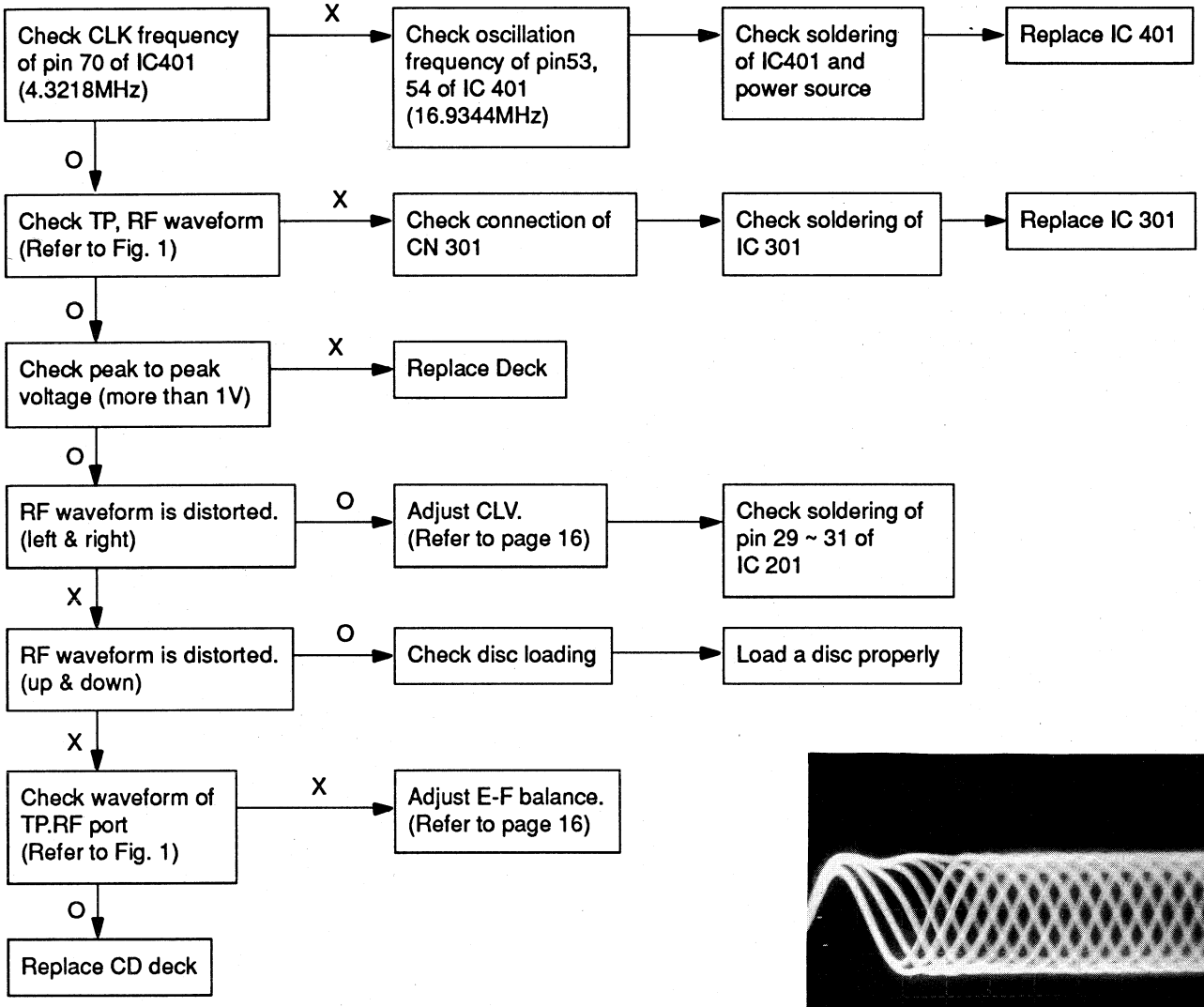
2. CD

* Be sure not to use a warped or dirt-build up disc in troubleshooting.

1) DISC DOESN'T ROTATE


Check voltage at pin39 of IC 601 (0V → 5V → 0V)
X
Check soldering of CN 601
check limit switch operation of Deck Ass'y
Replace Limit switch
O
Check voltage at pin79 of IC 601 (high → low) during play
X
Replace IC 601
O
Check voltage at pin5 of IC 301 (4.5V → 3.2V) during play
X
Replace IC 301
O
Check voltage at collector of Q301 (1.8V)
X
Check diode (D 301)
X
Replace D301.
O
Replace Q 301
O
Check connection of CN302
O
Check voltage at pin28 of IC 301 (high → low) during play
X
Check soldering of IC 301 and power source
O
Check signal presence of pin 28 of IC201
X
Check soldering of IC 201 and power source
O
Check voltage at collector of Q208, Q209 (± 12V)
X
Check power supply section
O
Check voltage at emitter of Q208, Q209 (0.7V) during play
X
Replace TR
O
Replace motor
Check voltage of TP.FEO (2.2V → −2.2V → 2.2V → −2.2V : continuing 4 times
X
Check voltage of IC 201 (± 5V)
X
Check power supply section
O
Check soldering of IC 201
O
Check voltage at pin6, 7 of IC 201 (high → low → high : continuing)
X
Check soldering of IC 201, 401, 601
O
Check voltage at collector of Q201 (12.7V) & Q202 (− 13V)
X
Replace TR
O
Check voltage at emitter of Q201, Q202 (2.2V → −2.2V: continuing 4 times)
X
Replace TR

2) LEAD IN NOT WORKING


Check CLK frequency of pin 70 of IC401 (4.3218MHz)
X
Check oscillation frequency of pin53, 54 of IC 401 (16.9344MHz)
Check soldering of IC401 and power source
Replace IC 401
O
Check TP, RF waveform (Refer to Fig. 1)
X
Check connection of CN 301
Check soldering of IC 301
Replace IC 301
O
Check peak to peak voltage (more than 1V)
X
Replace Deck
O
RF waveform is distorted. (left & right)
O
Adjust CLV. (Refer to page 16)
Check soldering of pin 29 ~ 31 of IC 201
X
RF waveform is distorted. (up & down)
O
Check disc loading
Load a disc properly
X
Check waveform of TP.RF port (Refer to Fig. 1)
X
Adjust E-F balance. (Refer to page 16)
O
Replace CD deck

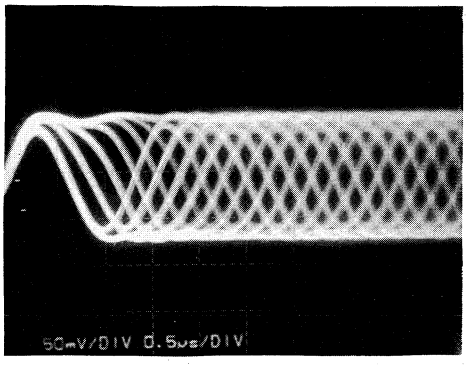
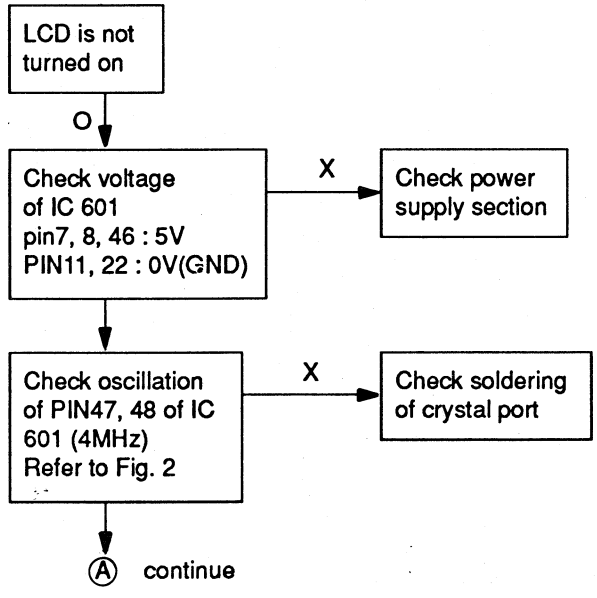


FIG. 1

3) DISPLAY NOT WORKING


LCD is not turned on
O
Check voltage of IC 601 pin7, 8, 46 : 5V PIN11, 22 : 0V(GND)
X
Check power supply section
Check oscillation of PIN47, 48 of IC 601 (4MHz) Refer to Fig. 2
X
Check soldering of crystal port
Ⓐ continue

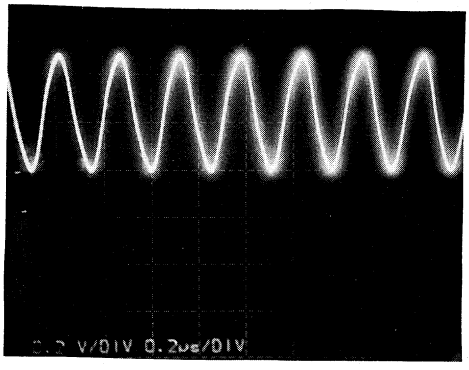


FIG. 2

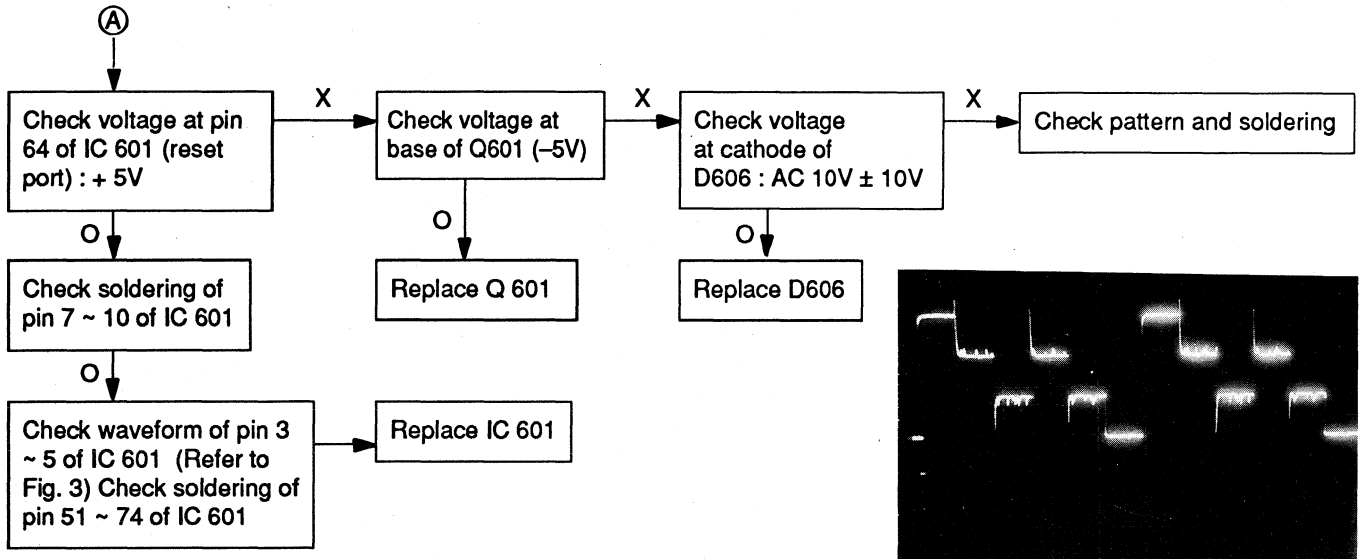
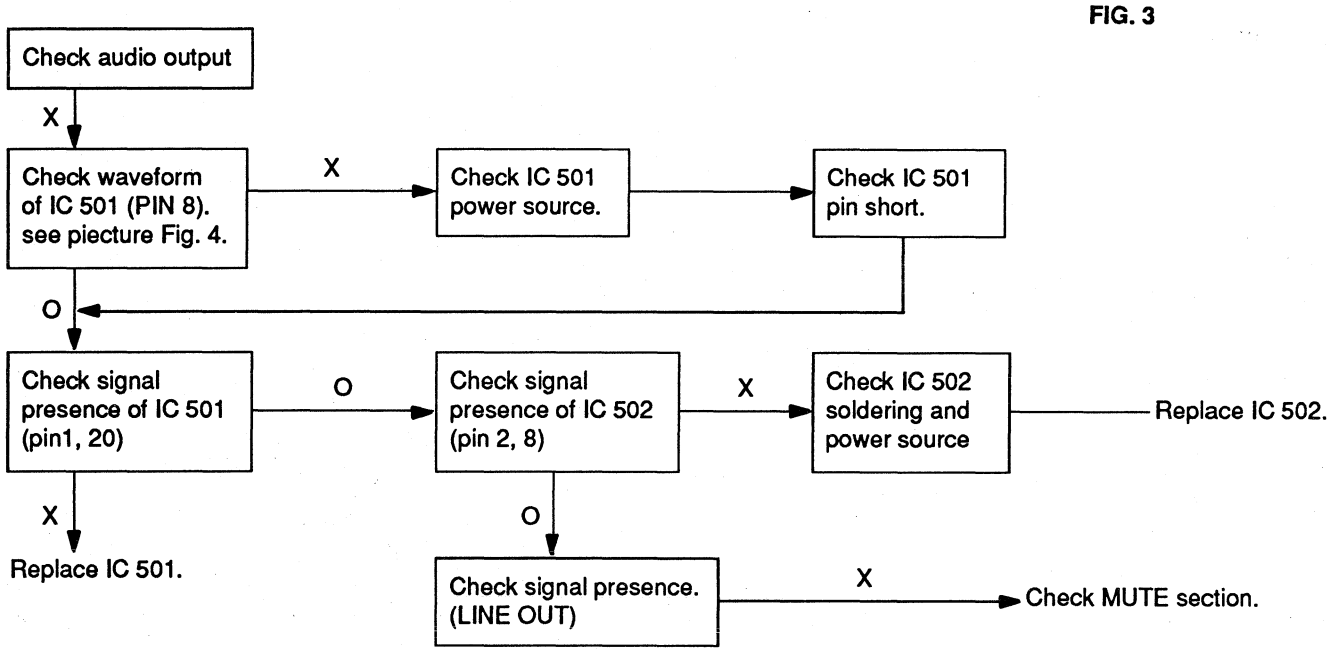

Ⓐ
Check voltage at pin 64 of IC 601 (reset port) : + 5V
X
Check voltage at base of Q601 (–5V)
X
Check voltage at cathode of D606 : AC 10V ± 10V
X
Check pattern and soldering
O
Check soldering of pin 7 ~ 10 of IC 601
O
Replace Q 601
O
Replace D606
O
Check waveform of pin 3 ~ 5 of IC 601 (Refer to Fig. 3) Check soldering of pin 51 ~ 74 of IC 601
Replace IC 601
0.2 V/DIV 5 ms/DIV

FIG. 3

4) SOUND NO OUTPUT



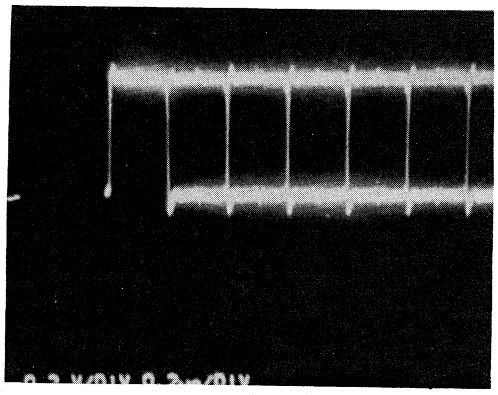


FIG. 4

■ ADJUSTMENT

Adjustments to this unit have already been made during production procedure.
Therefore, no adjustment is needed. If parts related to the adjustment are replaced, or readjustment is required, proceed with adjustments in the order given below.

1. TUNER

1) MEASURING INSTRUMENTS REQUIRED

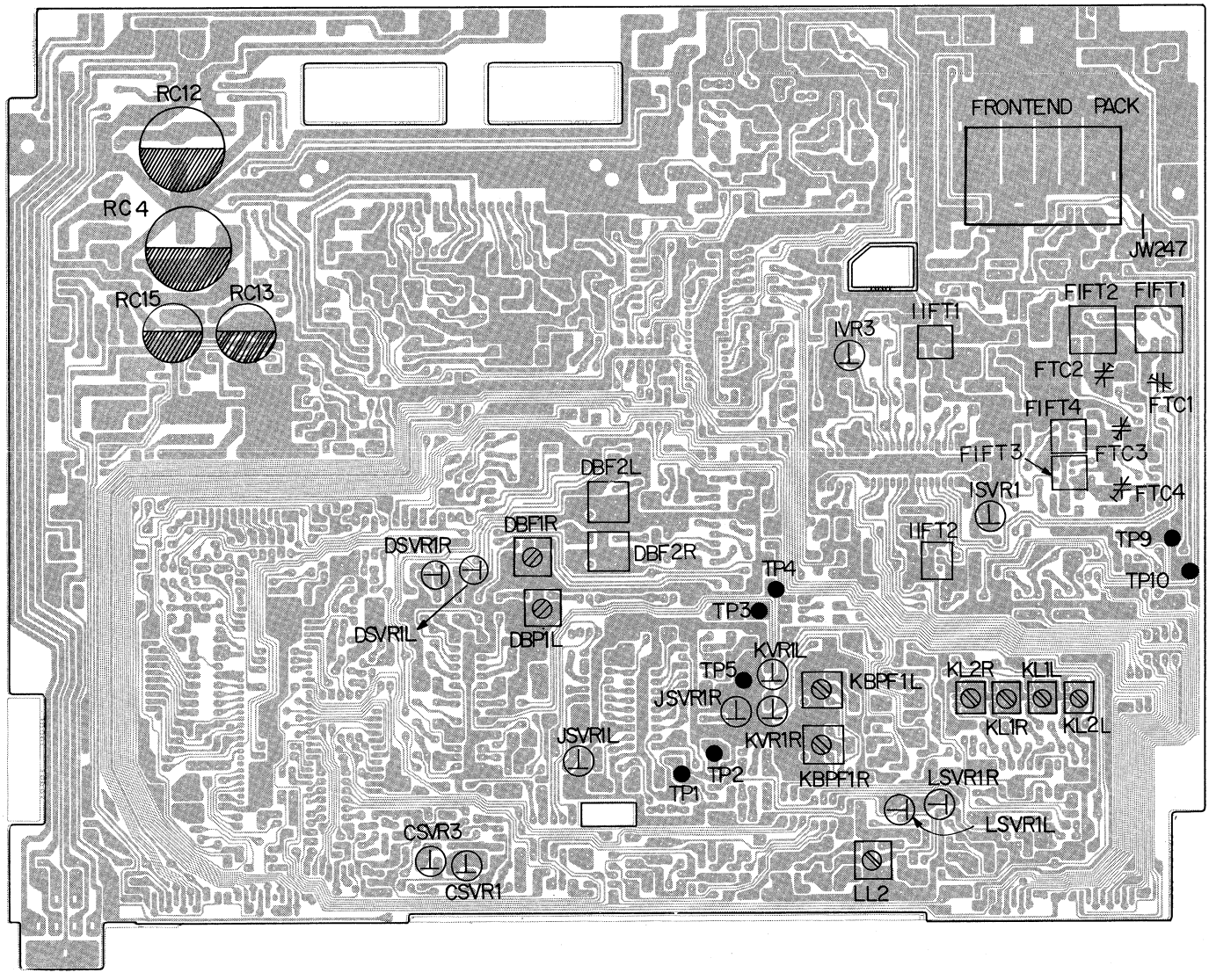
(1) AM standard signal generator (S.S.G)
: 400Hz, 30% MOD.
(2) FM standard signal generator
: output impedance 75Ω , (or 300Ω dummy), 1KHz, 40KHz DEV.
(3) Oscilloscope (4) VTVM
(5) Loop antenna
(6) Dummy load (8Ω)
(7) DC voltmeter

2) IMPORTANTS

(1) Check the power source first.
(2) Check function and band switch.
(3) The equalizer, volume and valance control should be turned to the mid position.

3) LOCATION OF ADJUSTMENT POINTS (PARTS SIDE)

MAIN PCB



4) ADJUSTMENT PROCEDURE

(1) FM ADJUSTMENT

STEP	ITEM	CONNECTION	SSG FREQ.	FREQ. SETTING	ADJUSTMENT POINT	RESULT & REMARK
1	IF center & T.H.D	FIG. 1	98MHz	98MHz	IIFT1	Distortion (DT) minimum
2	FM coverage	Connect DC to JW247 and GND	—	87.5MHz	FM OSC	3V
3	Auto selection level	FIG. 2	98MHz	98MHz	ISVR1	0V
4	FM stereo seperation	FIG. 3	98MHz	98MHz	IVR3	If L-CH is input, R-CH should be minimum and visa-versa.

* **High coverage and tracking adjustment are not required.**

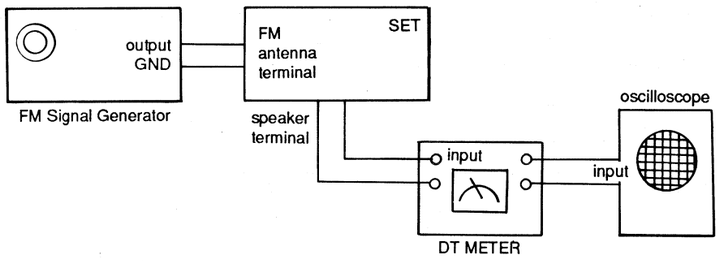


FIG.1) IF CENTER AND T.H.D

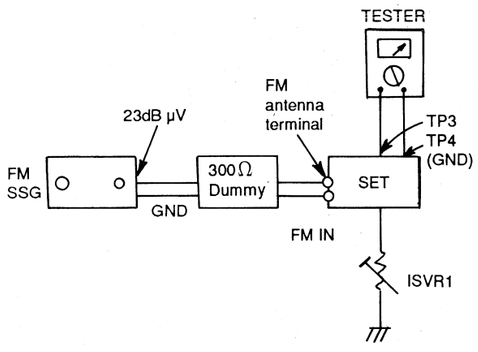


FIG. 2) AM AUTO SEARCH LEVEL

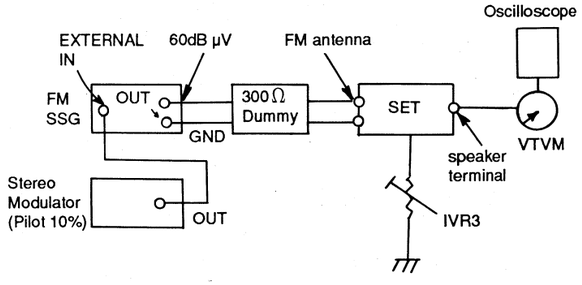


FIG. 3) FM STEREO SEPERATION

* FIG. 2, 3 : 300 dummy-optional

(2) AM ADJUSTMENT

① 2 BAND (FM/AM)

STEP	ITEM	CONNECTION	SSG FREQ.	FREQUENCY SETTING	ADJUSTMENT FREQUENCY	RESULT & REMARK
1	Intermidiate frequency (IF) adjustment	FIG. 4	450KHz	522KHz	IIFT2	Maximum output
2	AM frequency coverage adjustment	Connect DC voltmeter to TP9 and GND	—	522KHz	FIFT3	0.9V
3			—	1611KHz	FTC4	9V
4	Repeat step 2 and 3 several times.					
5	AM tracking adjustment	FIG. 4	594KHz	594KHz	FIFT1	Maximum output
6			1404KHz	1404KHz	FTC1	
7	Repeat step 5 and 6 several times.					

② 3 BAND (FM/MW/LW)

STEP	ITEM	CONNECTION	SSG FREQ.	FREQUENCY SETTING	ADJUSTMENT FREQUENCY	RESULT & REMARK
1	LW frequency coverage adjustment	FIG. 4	—	146KHz	FIFT4	0.9V
2			—	290KHz	FTC3	5V
3	Repeat step 1 and 2 several times.					
4	LW tracking adjustment	FIG. 4	160KHz	160KHz	FIFT2	Maximum output
5			270KHz	270KHz	FTC2	
6	Repeat step 4 and 5 several times.					

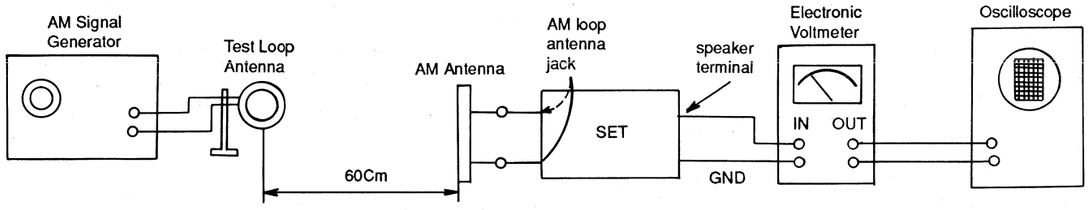


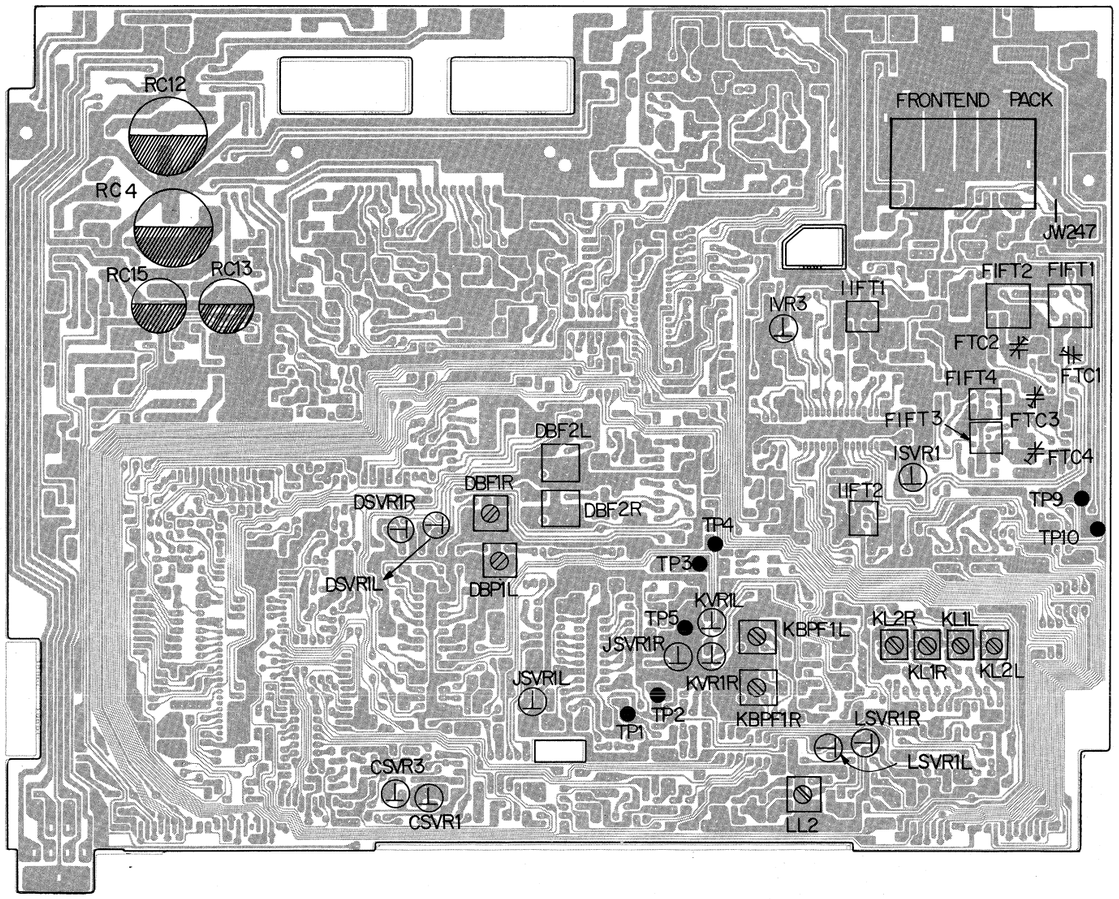
FIG. 4) AM LW TRACKING, AM IF

2. TAPE

1) MEASURING INSTRUMENTS REQUIRED
   (1) Oscilloscope
   (2) VTVM
   (3) TAPE
      ① MTT-111 (or equivalent) : 3KHz signal is recorded → tape speed
      ② MTT-5521 (or equivalent)
      ③ MTT-114NA (or equivalent) : 12.5KHz signal is recorded.→ Azimuth
      ④ MTT-150 (or equivalent) : 200mwb/m is recorded by DOLBY level.

2) LOCATION OF ADJUSTMENT POINTS (PARTS SIDE)

MAIN PCB



3) ADJUSTMENT PROCEDURE
   (1) TAPE SPEED

STEP	ITEM	CONNECTION	PREPARATION	ADJUSTMENT POINT	RESULT & REMARK
1	Normal speed adjustment	FIG. 1	Insert MTT-111 to DECK B. Press PLAY button.	CSVR3	3KHz
2	High speed adjustment	FIG. 1	Insert MTT-111 to DECK B. Connect CN24. Press PLAY button.	CSVR1	6KHz Disconnect CN24.

(2) PLAY LEVEL
   * Set DOLBY NR switch to off.
   ① DECK A

STEP	ITEM	CONNECTION	PREPARATION	ADJUSTMENT POINT	RESULT & REMARK
1	AZIMUTH	FIG. 2	Play MTT-114NA in the DECK A.	FIG. 3	Maximum output and same phase of L, R-CH. Fix the screw.

   ② DECK B

STEP	ITEM	CONNECTION	PREPARATION	ADJUSTMENT POINT	RESULT & REMARK
1	AZIMUTH	FIG. 2	Play MTT-114NA in the DECK B.	FIG. 3	Maximum output and same phase of L, R-CH. Fix the screw.
2	Playback output level	FIG. 2	Play MTT-150 in the DECK B	JSVR1L, R	245mV

(3) RECORD AND PLAYBACK ADJUSTMENT
   * Set DOLBY NR switch to off.

STEP	ITEM	CONNECTION	PREPARATION	ADJUSTMENT POINT	RESULT & REMARK
1	Bias oscillation frequency	FIG. 4 (TP1 : L-CH, TP2 : R-CH, TP5 : GND)	Record MTT-5521 in the DECK B	LL2	105KHz
2	Bias current	FIG. 4 (TP1 : L-CH, TP2 : R-CH, TP5 : GND)	Record MTT-5521 in the DECK B	LSR2L, R	50mV
3	Record source level	FIG. 4 (TP1 : L-CH, TP2 : R-CH, TP5 : GND)	Record MTT-5521 in the DECK B	DSR2L, R	245mV
4	Signal current	FIG. 4 (TP1 : L-CH, TP2 : R-CH, TP5 : GND)	Connect CN20. Record MTT-5521 in the DECK B.	KVR1L, R	6.2mV Disconnect CN20.

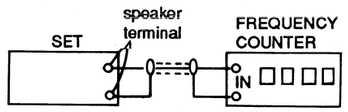


FIG. 1

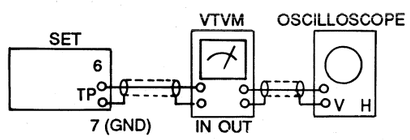


FIG. 2

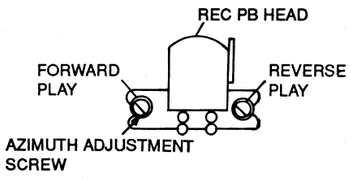


FIG. 3

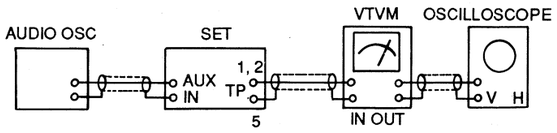


FIG. 4

3. CD

1) MEASURING INSTRUMENT

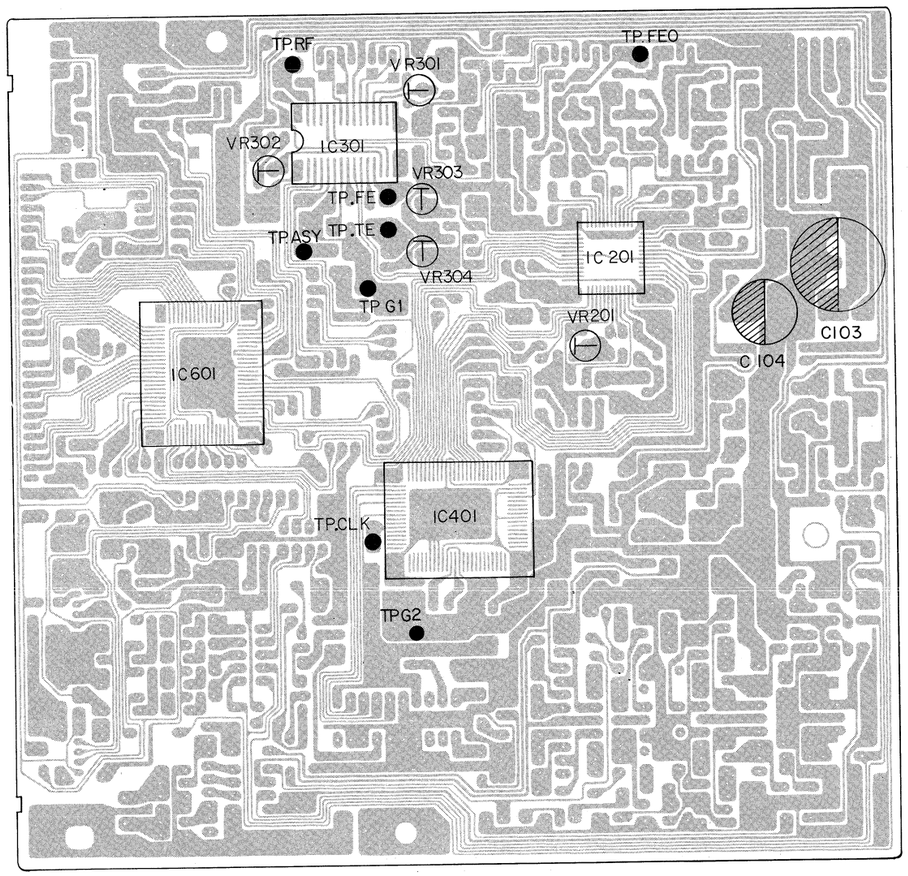
1) Oscilloscope (100MHz≧Frequency)
2) Probe (10 : 1)
3) Frequency counter

2) IMPORTANTS

1) Semi-Volume position can be a little different according to unit.
2) Be sure not to use a warped or dirt-build up disc in adjusting.
3) When adjusting Semi-Volume, use plastic screw driver.

3) LOCATION OF ADJUSTMENT POINTS (PARTS SIDE)

CD PCB



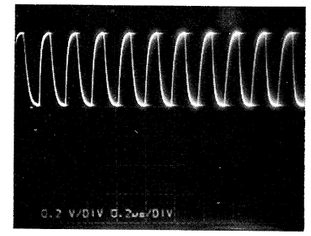
VR201	:	CLV adjustment
VR301	:	E-F balance adjustment
VR303	:	Focus gain adjustment
VR302	:	Focus bias adjustment
VR304	:	Tracking gain adjustment

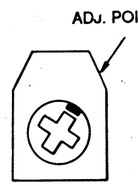
TP.FE	:	To oscilloscope signal port
TP.TE	:	To oscilloscope signal port
TP. CLK	:	To oscilloscope signal port
TP.G1	:	To oscilloscope GND port
TP.G2	:	To oscilloscope GND port

4) ADJUSTMENT PROCEDURE

(1) CLV ADJUSTMENT
① Turn power on and load a disc.
② Frequency counter connection
(+) terminal ; TP. CLK
(–) terminal ; TP. G2
③ Connect TP.ASY to TP. G1
④ Adjust VR201 so the frequency counter reads 4.38 ~ 4.40MHz. (Adjust in stop mode)
⑤ Disconnect TR. ASY from TP.G1

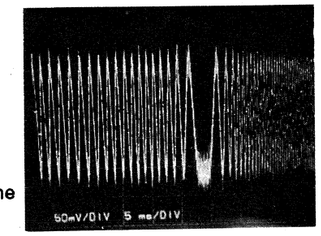
CLV

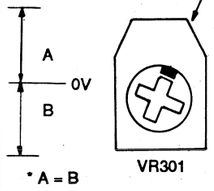




(2) E-F BALANCE ADJUSTMENT
① Turn power on and load a disc.
② Press play.
③ Oscilloscope setting and connection
{VOLT/DIV ; 50mV {(+) terminal ; TP.TE
{TIME/DIV ; 5mS {(–) terminal ; TP. G1
④ Adjust VR304 fully counter clockwise
⑤ Adjust VR301 so the waveform is as shown in the picture.
⑥ Set VR304 back to the place it was before adjustment.

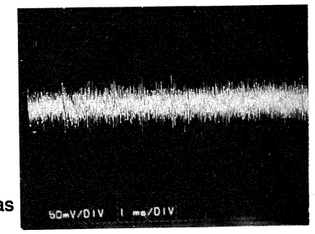
E-F BALANCE

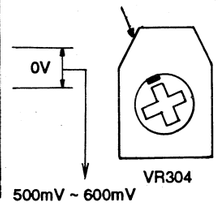




(3) TRACKING GAIN ADJUSTMENT
① Turn power on and load a disc.
② Press play.
③ Oscilloscope setting and connection
{VOLT/DIV ; 50mV {(+) terminal ; TP.TE
{TIME/DIV ; 1mS {(–) terminal ; TP. G1
④ Adjust VR304 so the peak to peak waveform is as shown in the picture.

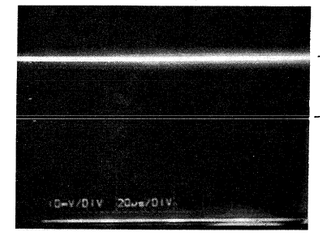
TRACKING GAIN





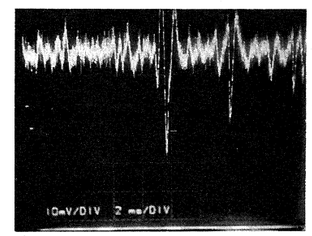
(4) FOCUS BIAS ADJUSTMENT
① Turn power on and load a disc.
② Oscilloscope setting and connection
{VOLT/DIV ; 10mV {(+) terminal ; TP.FE
{TIME/DIV ; 20 μS {(–) terminal ; TP. G1
③ Adjust VR302 so the waveform is as shown in picture. (Adjust in stop mode)

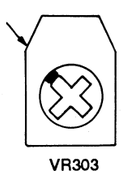
FOCUS BIAS



(5) FOCUS GAIN ADJUSTMENT
① Turn power on and load a disc.
② Press play.
③ Oscilloscope setting and connection
VOLT/DIV ; 10mV {(+) terminal ; TP.FE
TIME/DIV ; 2mS {(–) terminal ; TP. G1
④ Adjust VR303 so the peak to peak waveform is shown in the picture.

FOCUS GAIN

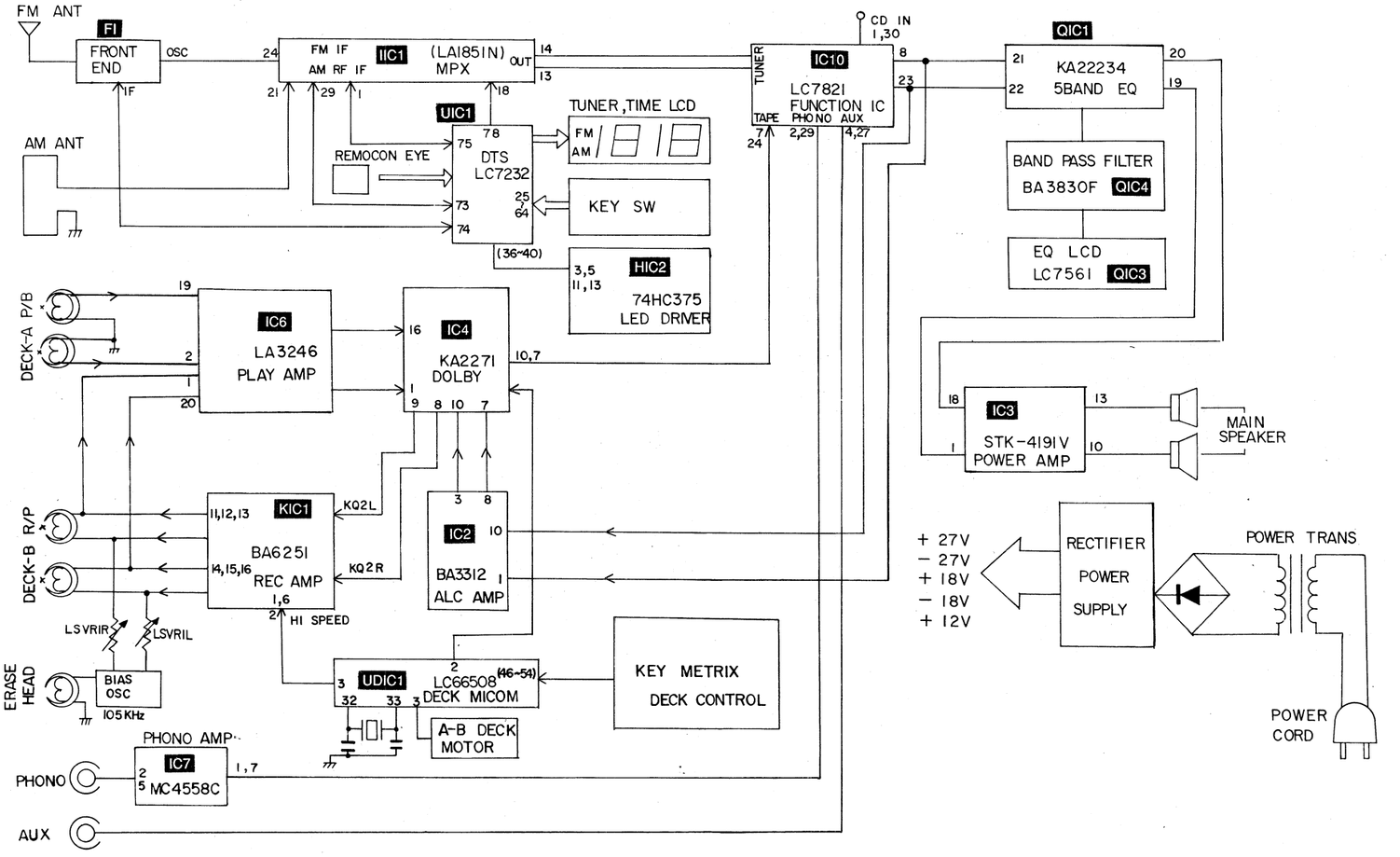


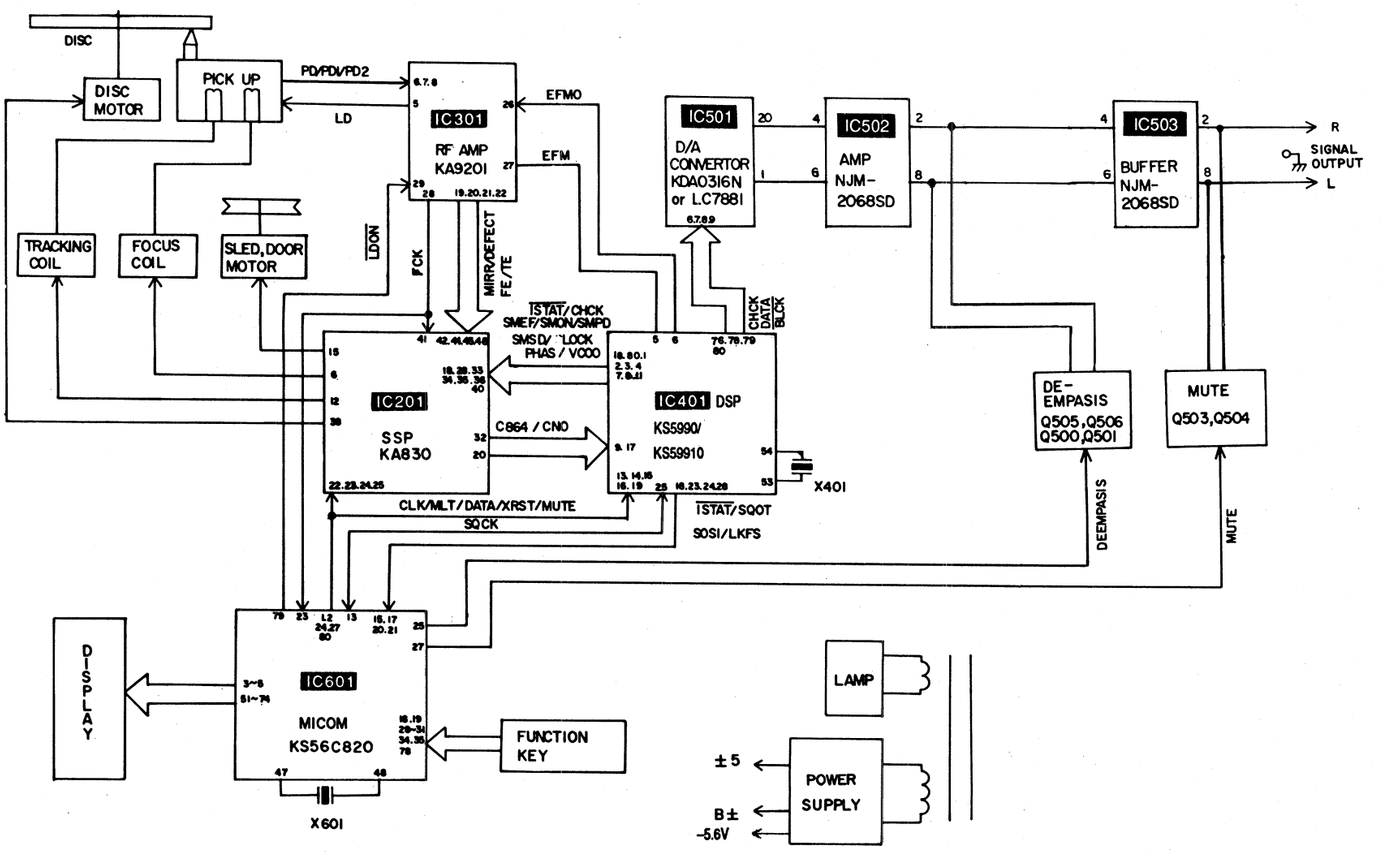


(Pictures taken in 10 : 1 probe)

■ BLOCK DIAGRAM

1. MAIN SECTION



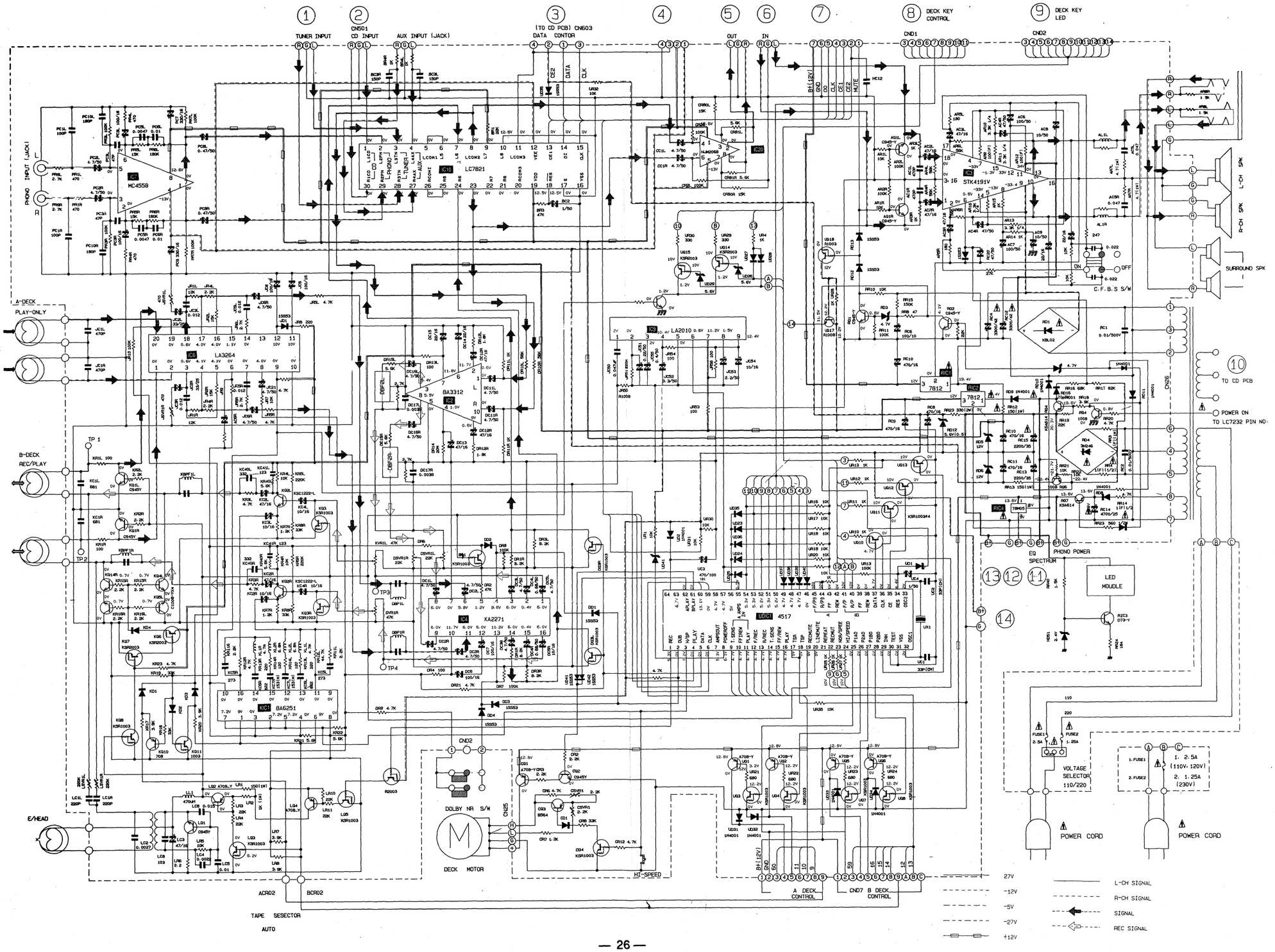


2. CD SECTION

■ SCHEMATIC DIAGRAM

1. MAIN SECTION

1. The unit of all resistors is Ω unless otherwise stated. (K : KΩ , M : MΩ). All resistors are 1/4W or 1/8W unless otherwise stated.
2. The unit of all capacitors is μF unless otherwise stated. (P : PF).
3. The schematic diagram is subject to change upon improvement without prior notice.
4. ⚠ indicates parts for circuit safe guarding purposes. Therefore, when replacing, be sure to use specified parts only.



■ SCHEMATIC DIAGRAM

1. MAIN SECTION

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3. The schematic diagram is subject to change upon improvement without prior notice.
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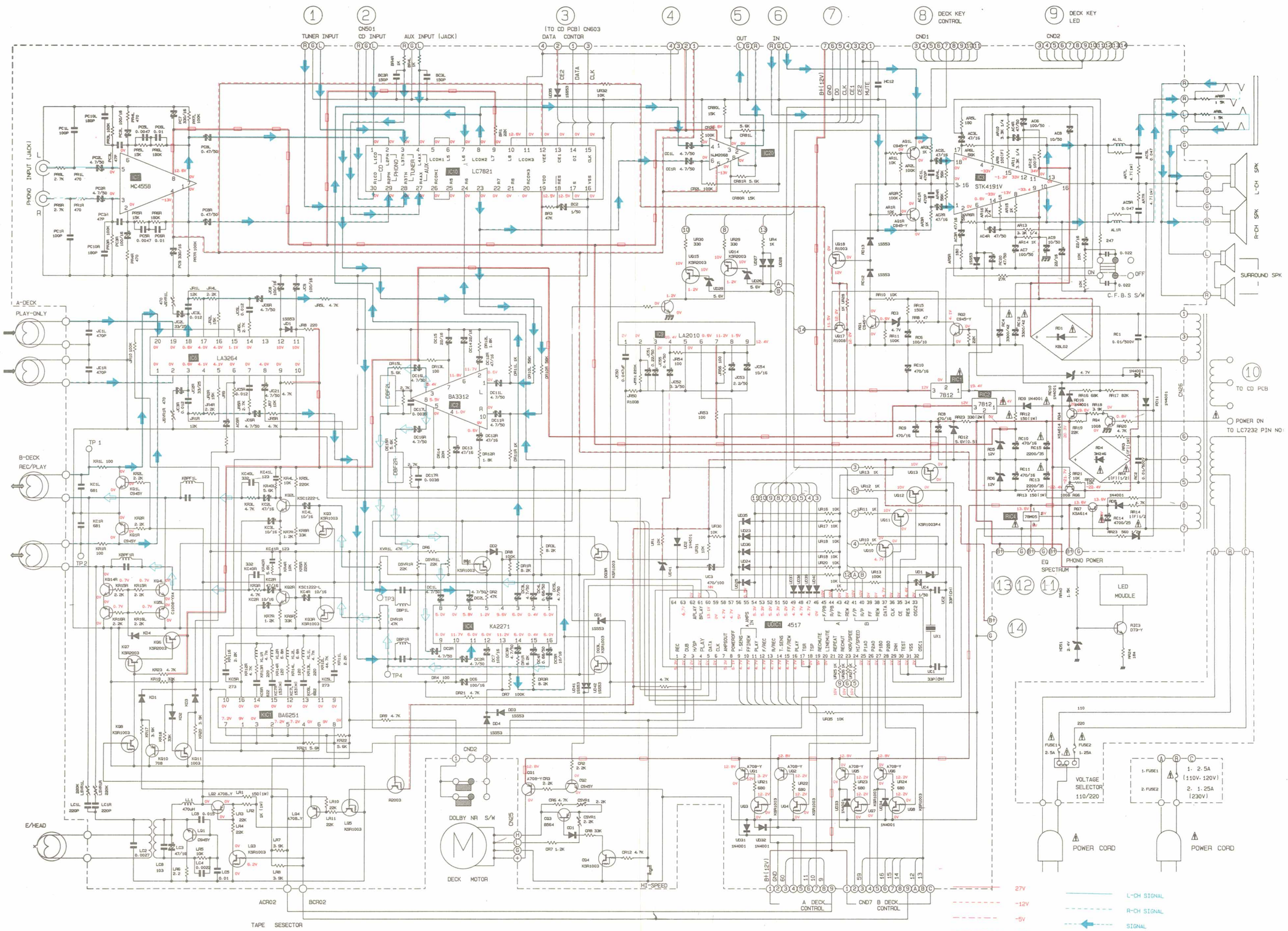
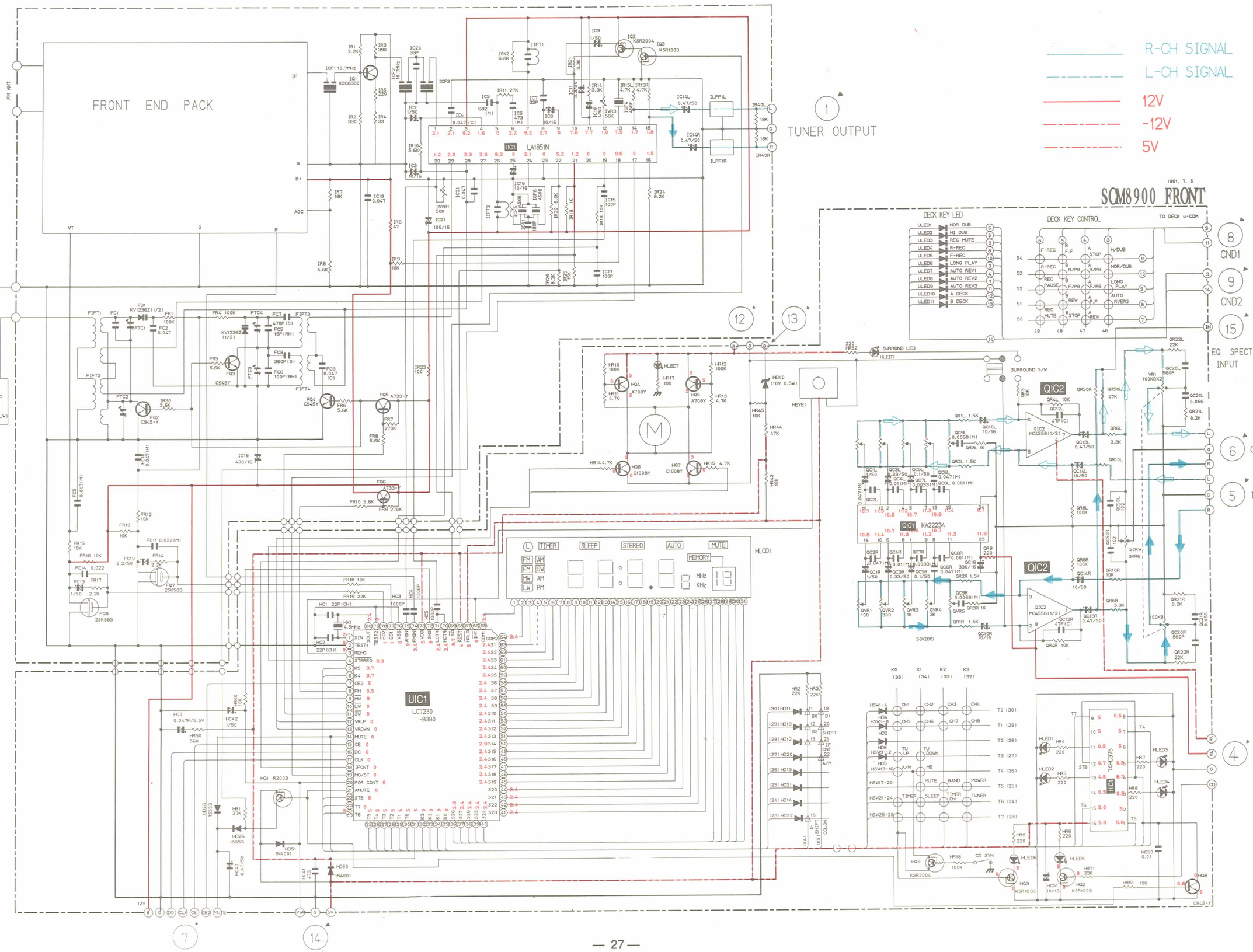


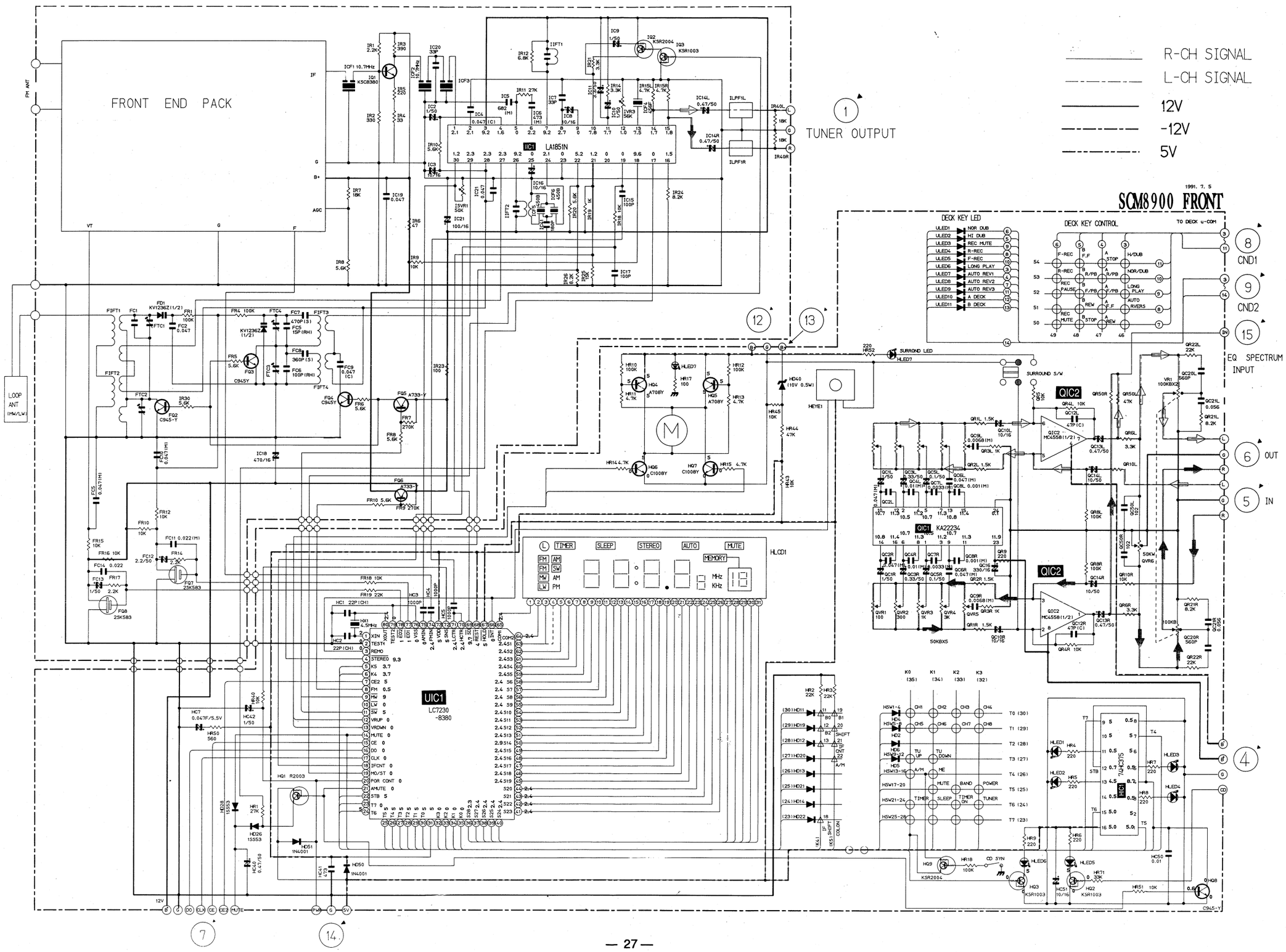
2. FRONT SECTION

1) FRONT

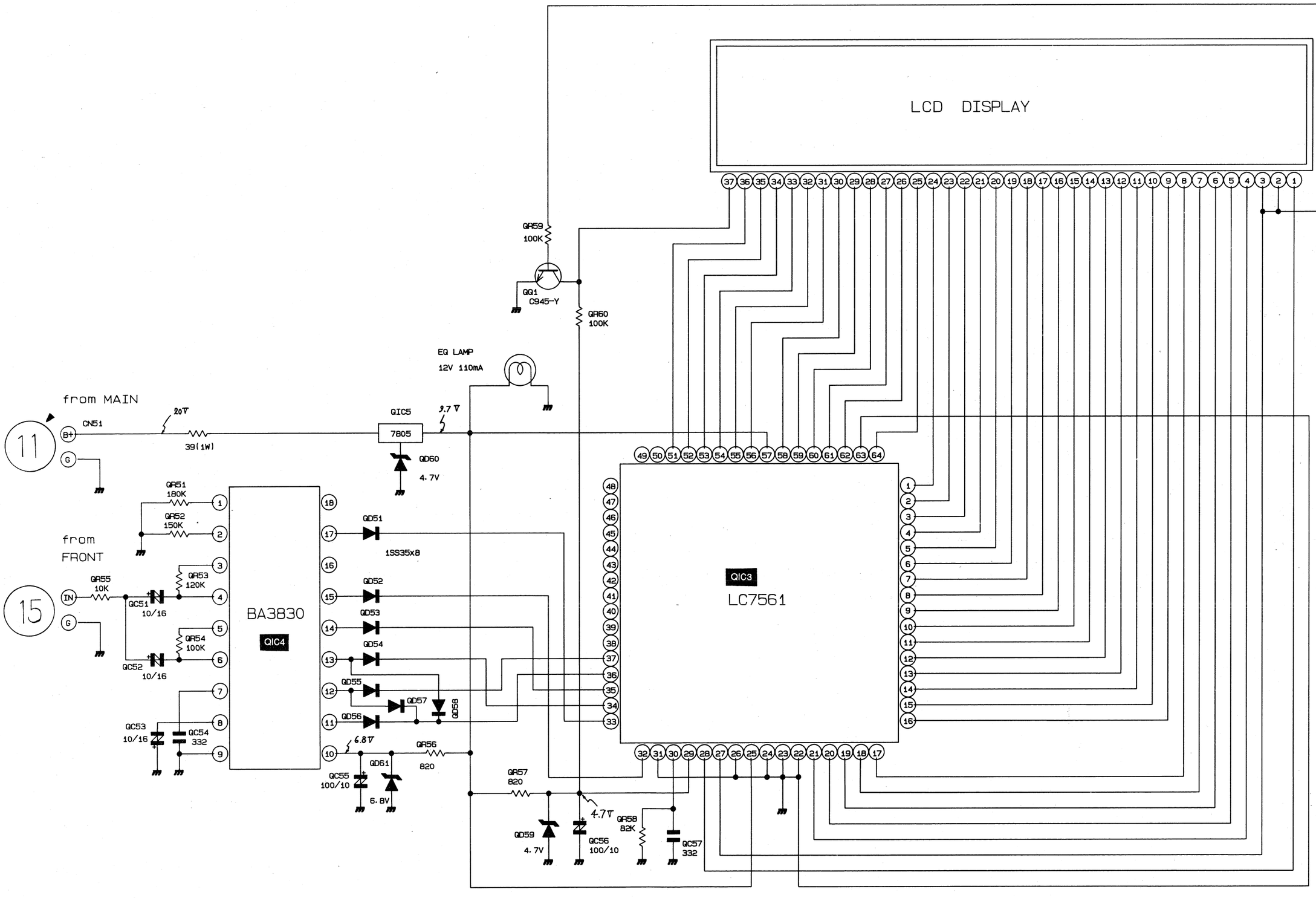


2. FRONT SECTION

1) FRONT

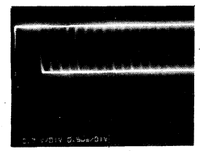


2) SUB


LCD DISPLAY
QR59
100K
QG1
C945-Y
QR60
100K
EG LAMP
12V 110mA
from MAIN
CN51
B+
G
20V
39(1W)
QIC5
7805
9.7V
QD60
4.7V
QR51
180K
QR52
150K
from
FRONT
QR55
10K
QR53
120K
QC51
10/16
QR54
100K
QC52
10/16
QC53
10/16
QC54
332
BA3830
QIC4
QD51
1SS35x8
QD52
QD53
QD54
QD55
QD57
QD58
QD56
6.8V
QR56
820
QD61
QC55
100/10
6.8V
QR57
820
4.7V
QD59
4.7V
QC56
100/10
QR58
82K
QC57
332
QIC3
LC7561

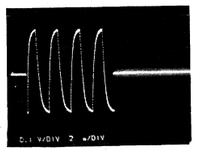
3. CD SECTION

① EFM

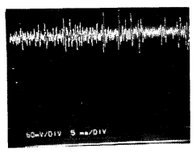


0.2V/DIV 0.5 μS/DIV

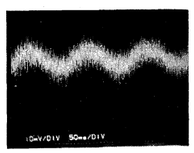
②FEO (no disc)



③FEO (play)



④ TEO



IC301 KA9201 (RF-AMP)

IC201 (SSP) KA830

IC501 (DAC) KDA0316

IC502 NJM2068SD

IC503 NJM2068SD

IC401 (DSP) KS5990 /59910

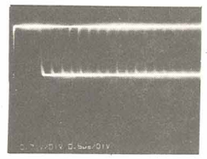
IC601 (μ-COM) KS56C820

SCM8550CD.ES
SCM8900CD.ES 1991.6.3

B + DIGITEL SIGNAL
B - ANALOG SIGNAL

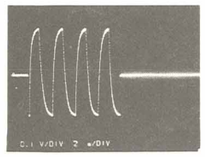
3. CD SECTION

① EFM

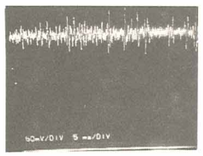


0.2V/DIV 0.5 µS/DIV

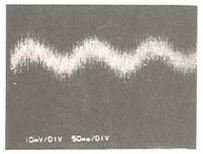
② FEO (no disc)

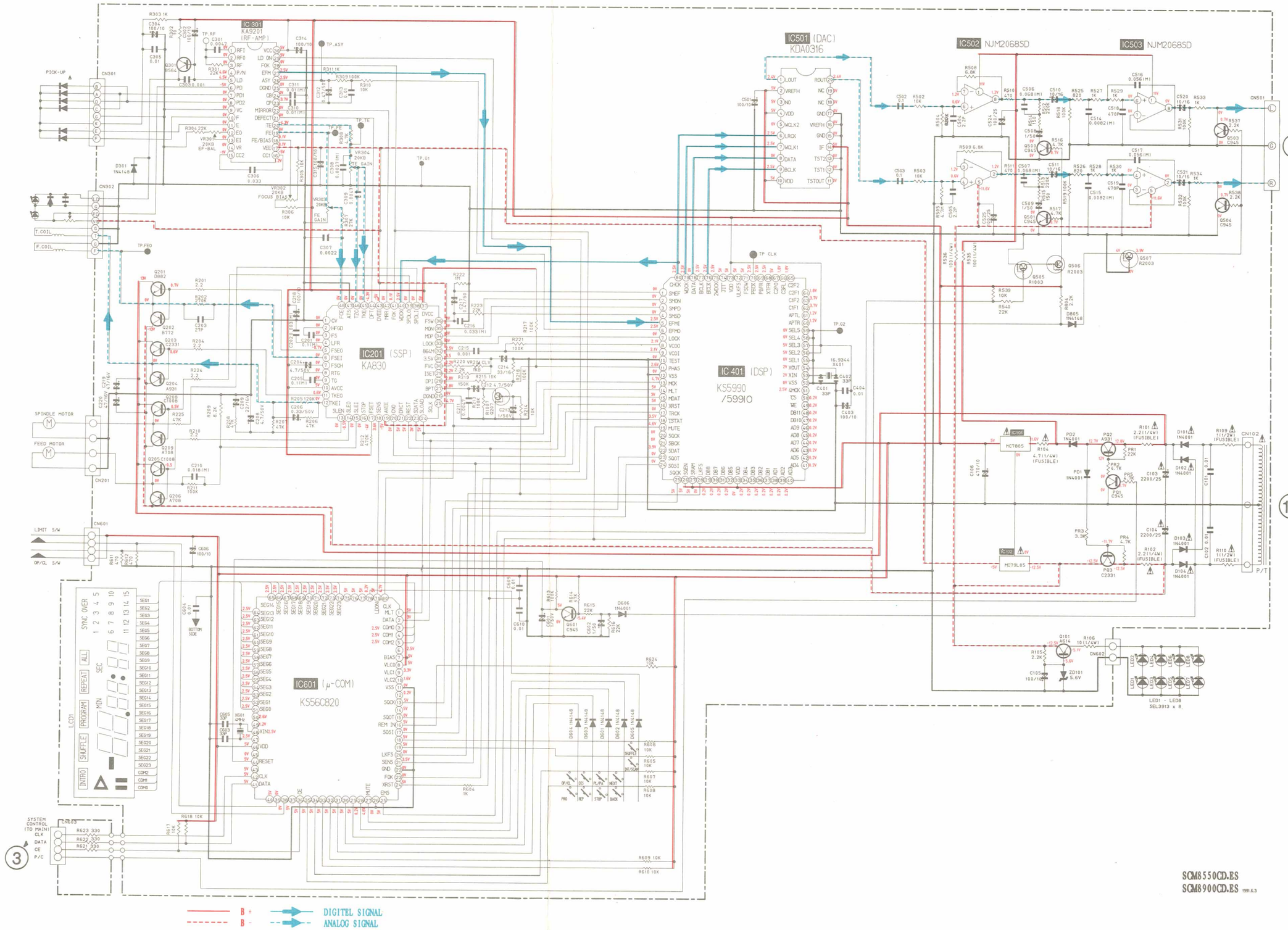


③ FEO (play)



④ TEO





2

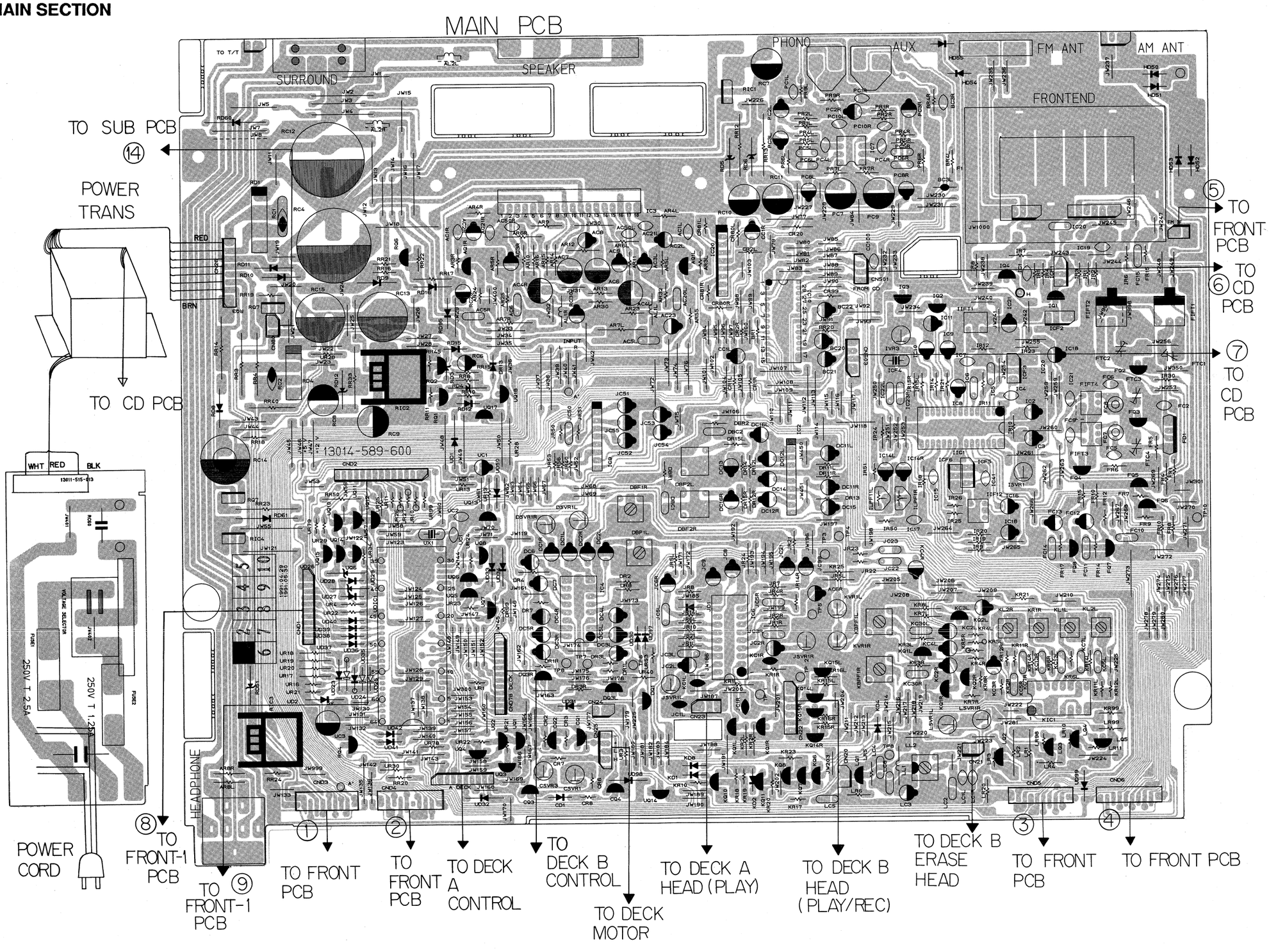
10

3

SCM8550CD.ES
SCM8900CD.ES 1991.6.3

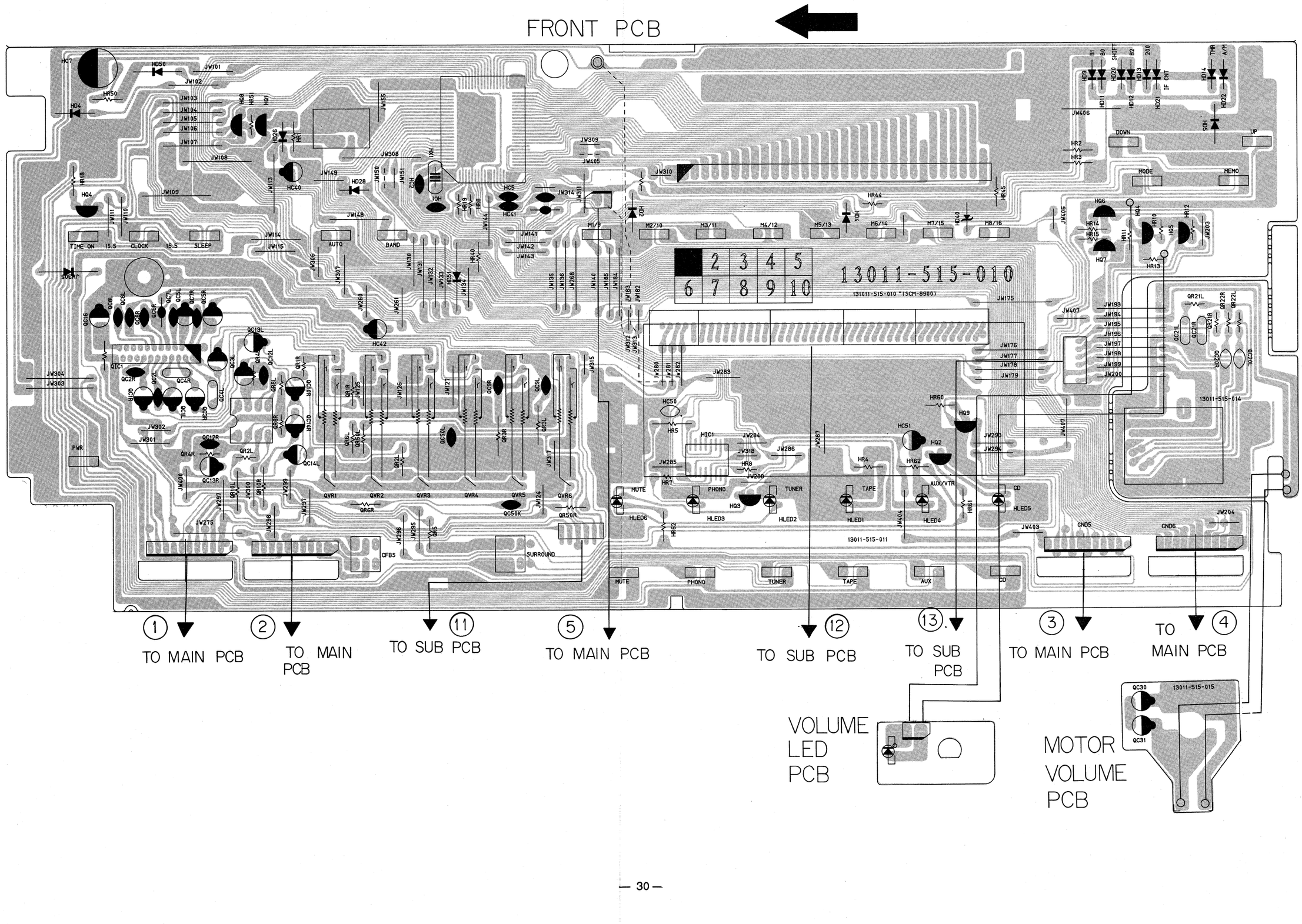
■ WIRING DIAGRAM (PARTS SIDE)

1. MAIN SECTION



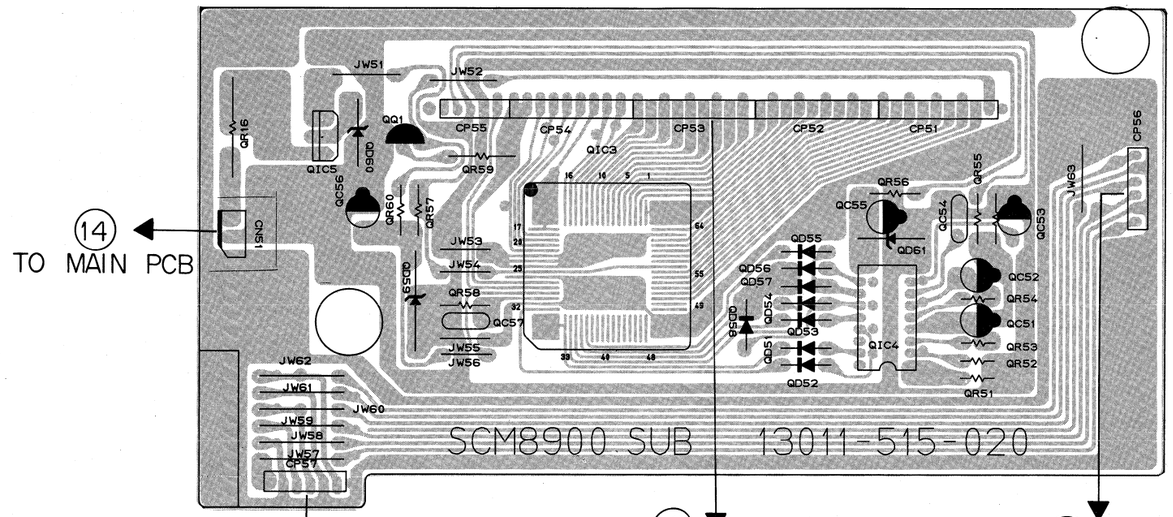
2. FRONT SECTION

1) FRONT



2) FRONT & SUB

SUB PCB



(14) TO MAIN PCB

(11) TO FRONT PCB

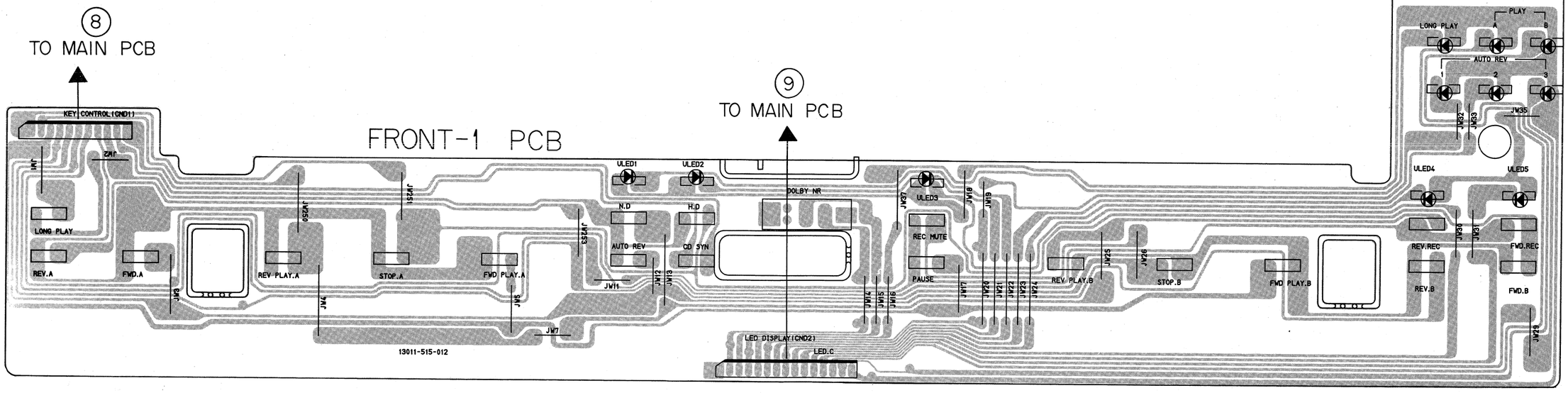
(12) TO FRONT PCB

(13) TO FRONT PCB

(8) TO MAIN PCB

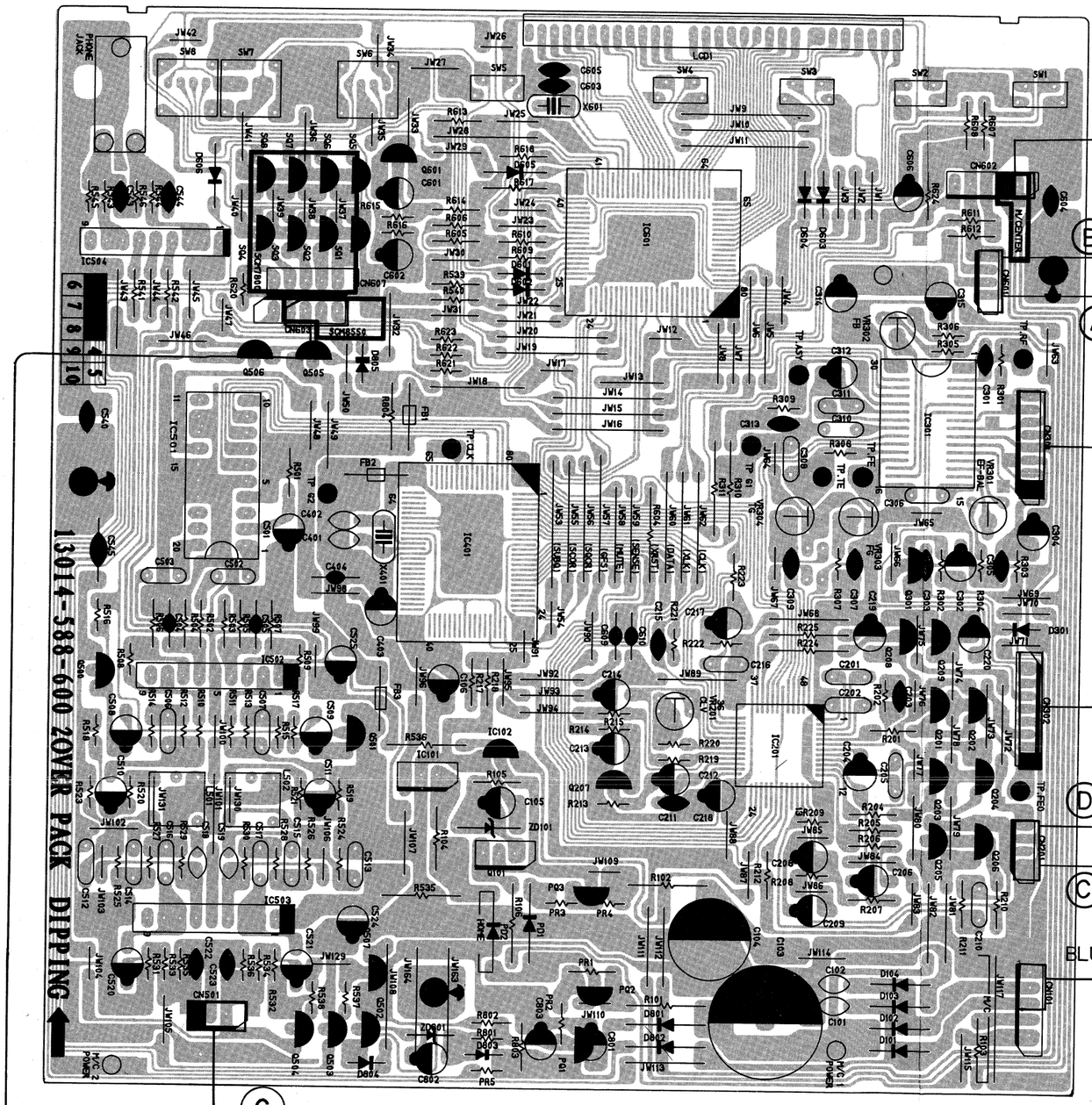
(9) TO MAIN PCB

FRONT-1 PCB

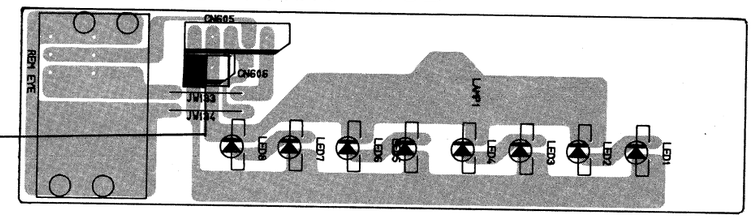


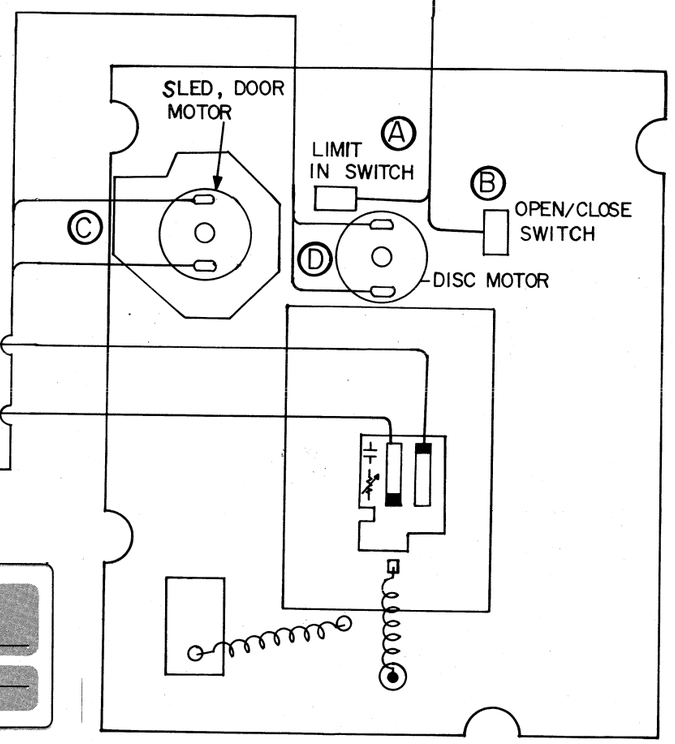
3. CD SECTION

CD MAIN PCB



CD FRONT PCB





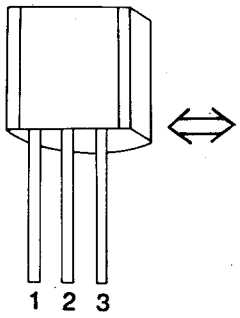
CD DECK ASS'Y
(BOTTOM SIDE)

■ IC & TR INTERNAL DIAGRAM

1. MAIN

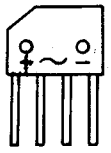
- TR & DIODE

1)

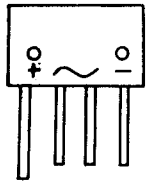


TR	1	2	3
KSR2003, KSR1003, KSR1007 KSR1009, KSR2007, KSC2331 KSR2004	E	C	B
KSC945, KSC1008, KSB564 KSA733, KSC838, KSA708 KSC1222	E	B	C

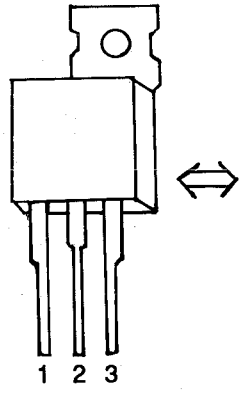
2) 3N246 (DIODE BRIDGE) : RD4



3) PBL403 (DIODE BRIDGE) : RD1

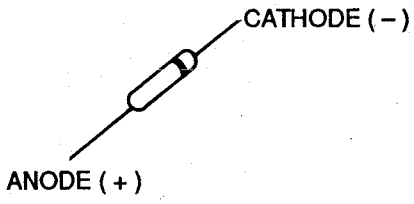


4)

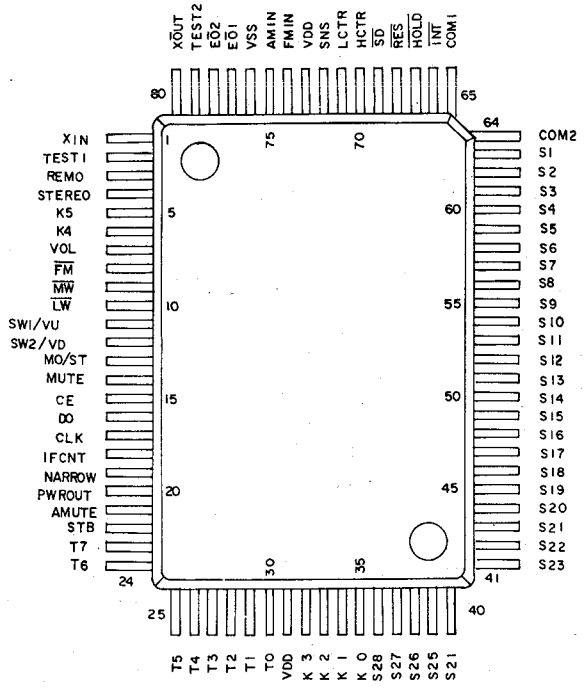


TR	1	2	3
MC78M05 MC7812C	IN	GND	OUT
KSD73-Y	B	C	E

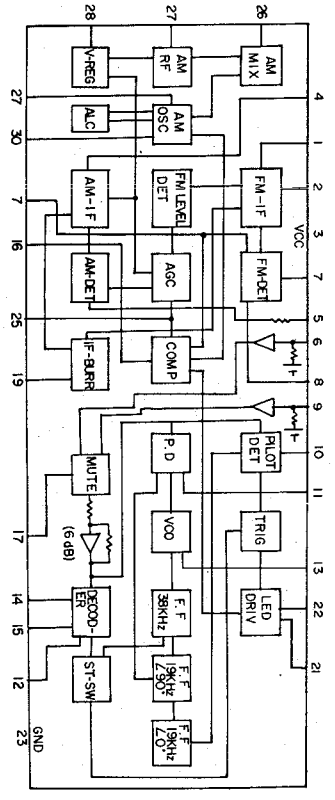
5) IN4148M, IN4001, 1SS53, ZENER DIODE



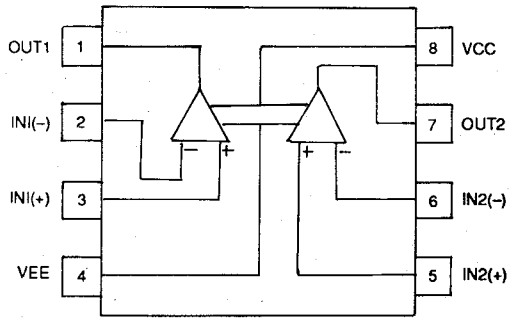
- LC7232-8380 (IC-DTS PLL) : UIC1



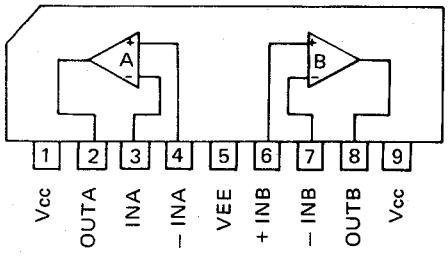
- LA1851N (FM, AM, IF IC) : IIC1



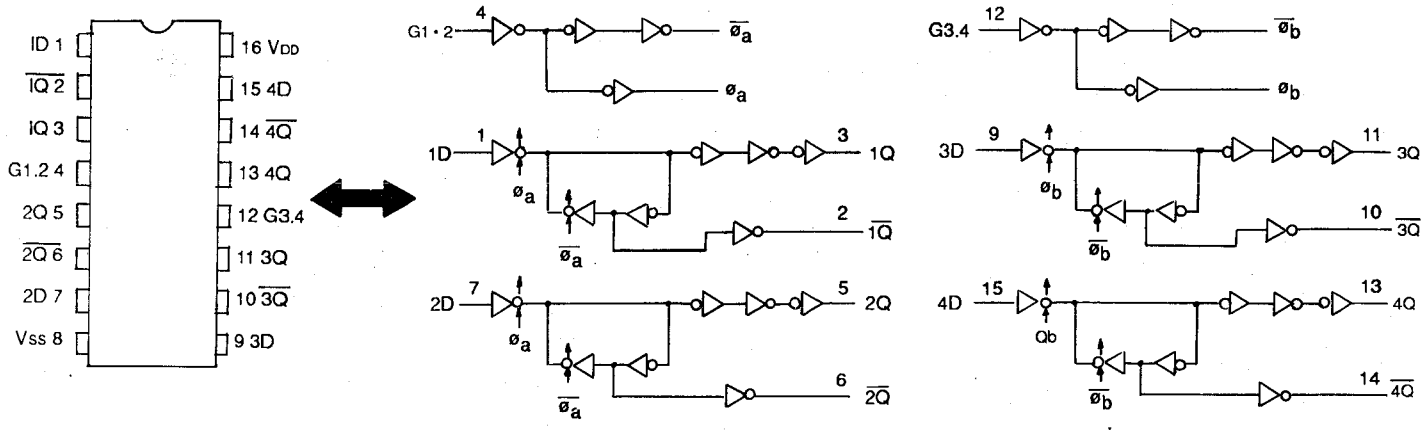
● MC4558C (OP AMP) : IC7, QIC2



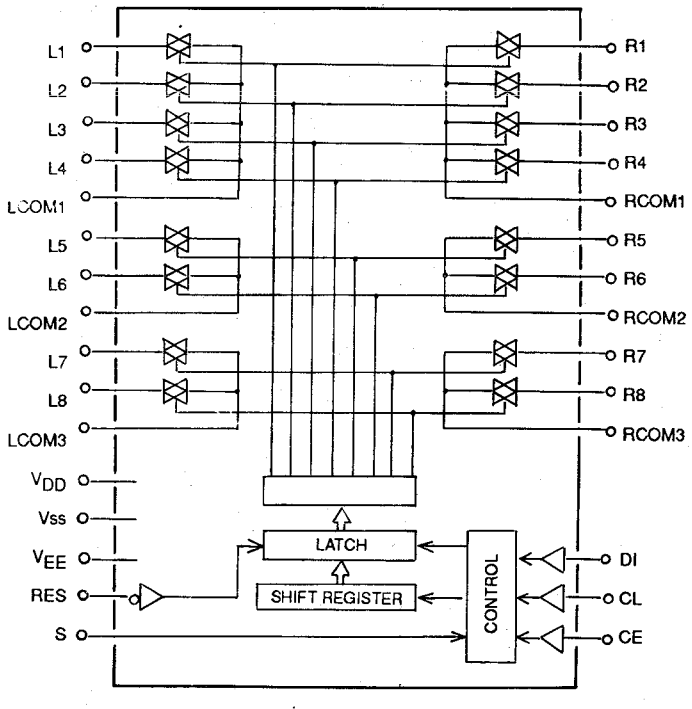
● NJM2068SD (OP AMP) : IC20



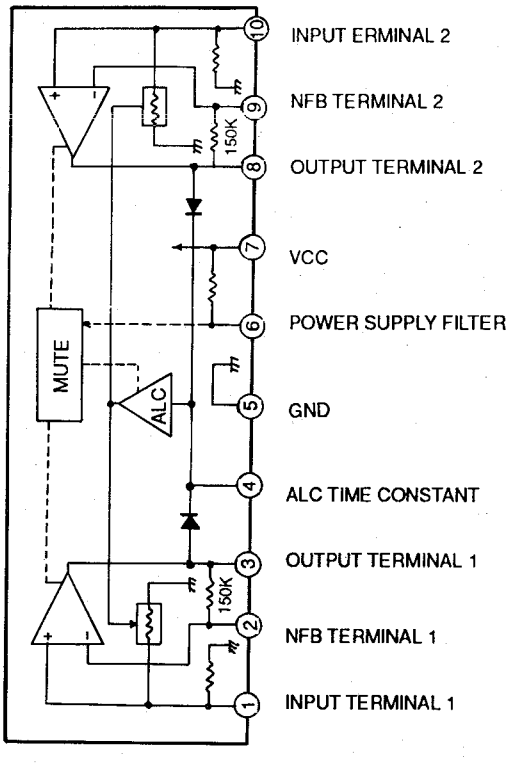
● LC74HC375/TC74HC375AF (IC-HCT) : HIC1



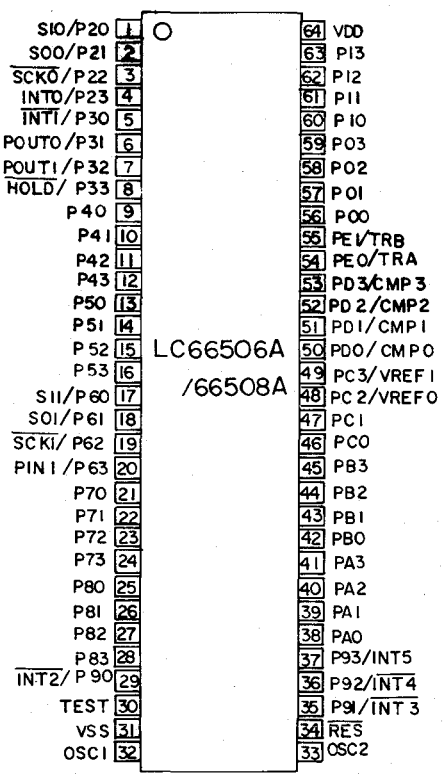
● LC7821 (IC-FUNCTION) : IC10



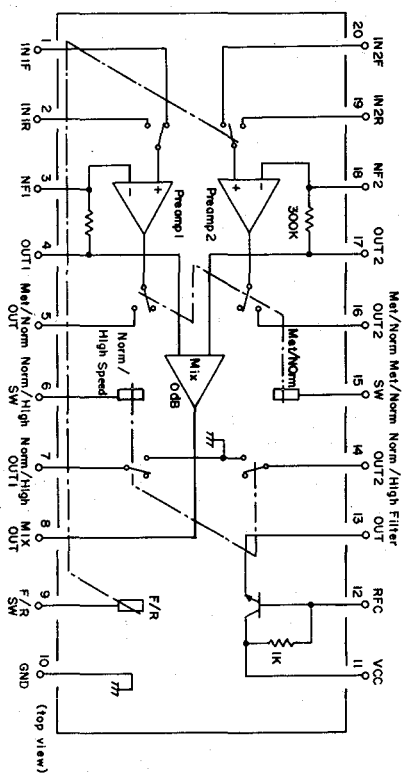
● BA3312N (IC-EQ) : IC2



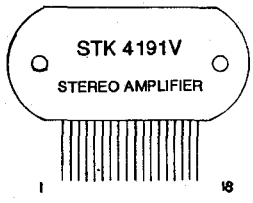
● LC66508-4517 (IC-μ COM) : UDIC1

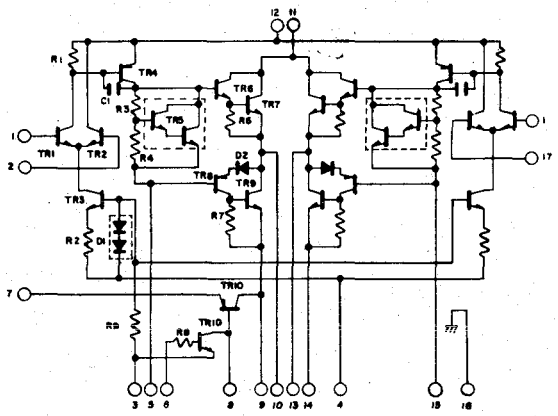


● LA3246 (IC-PLAY) : IC6

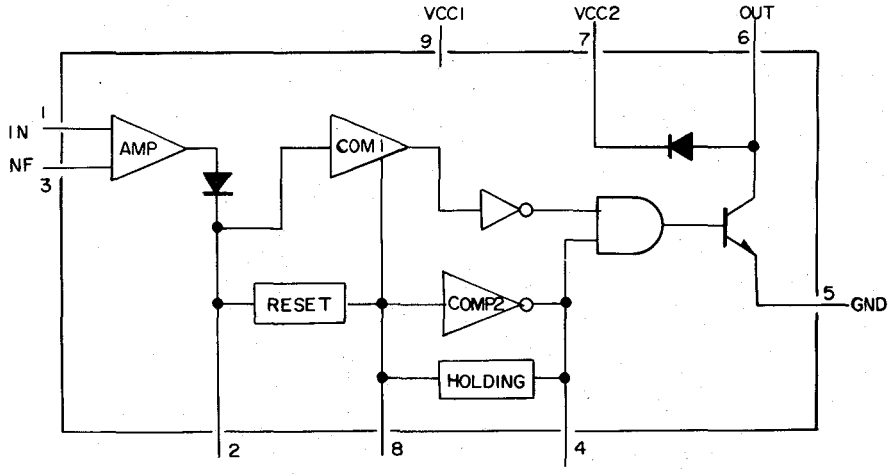


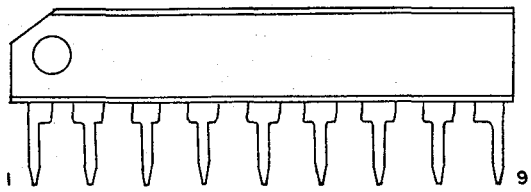
● STK4191 (IC-POWER) : IC3



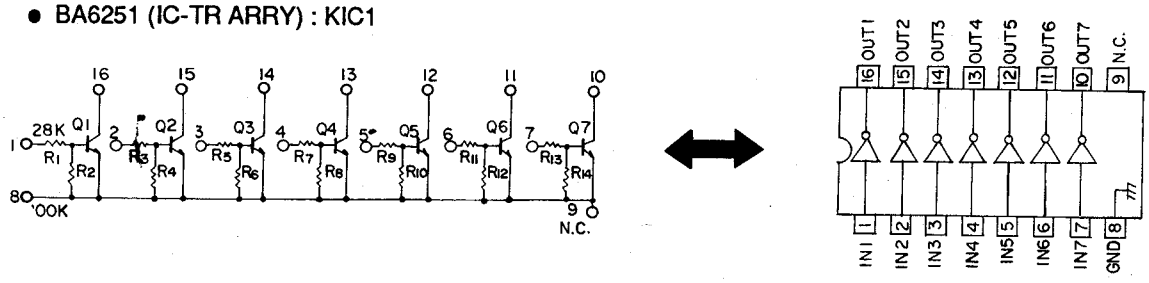


● LA2010 (IC-AMPS) : IC9

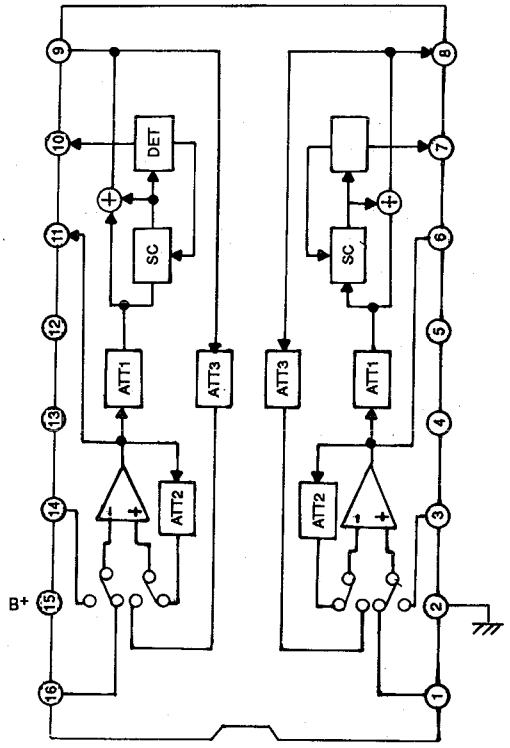




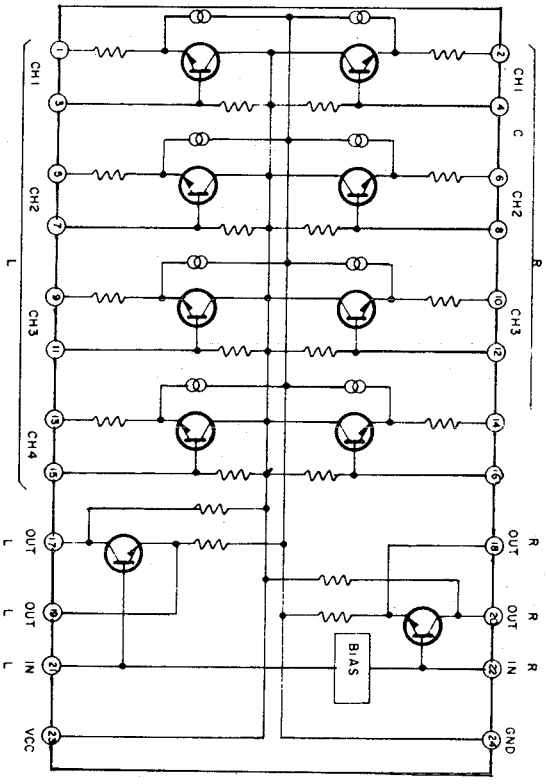
● BA6251 (IC-TR ARRY) : KIC1


16 15 14 13 12 11 10
28K Q1 Q2 Q3 Q4 Q5 Q6 Q7
R1 R2 R3 R4 R5 R6 R7 R8 R9 R10 R11 R12 R13 R14
1
8
100K
9
N.C.
OUT1 OUT2 OUT3 OUT4 OUT5 OUT6 OUT7 N.C.
IN1 IN2 IN3 IN4 IN5 IN6 IN7 GND

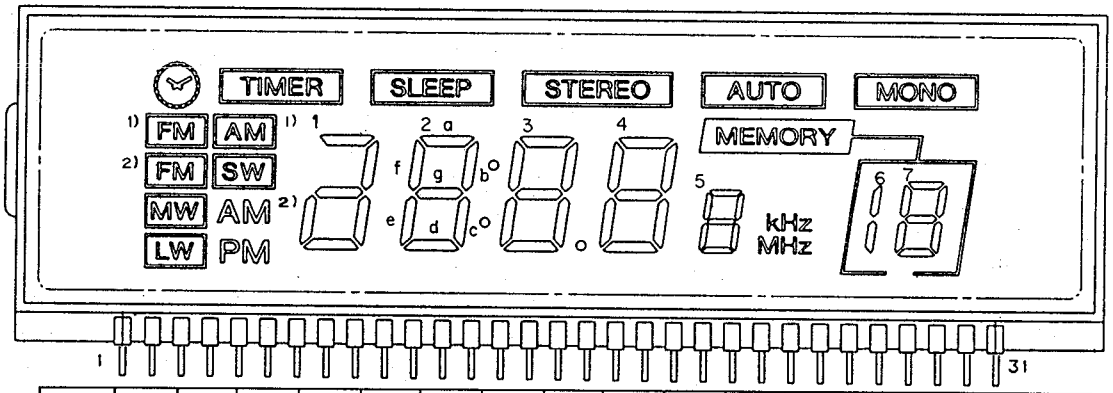
● KA2271 (DOLBY IC) : IC4



● KA22234 (IC-LINER) : QIC1



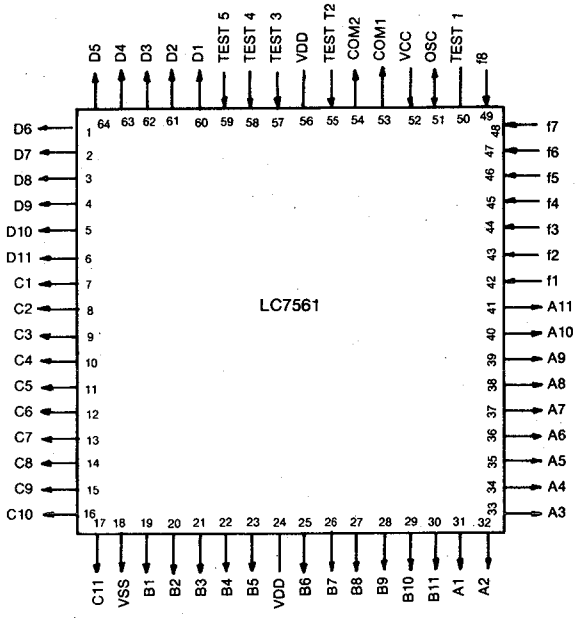
● 8190JP (LCD1) : HLCD1



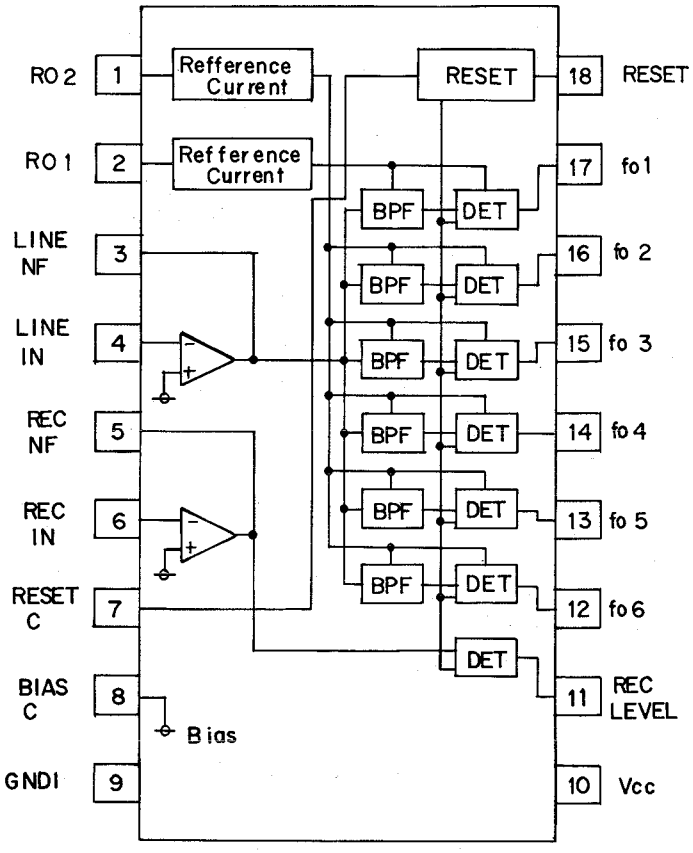
NO	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
COM1	COM	—	AM 1)	MW	SW	STEREO	PM	1b	1c	2f	2e	2d	2a	3f	3e	3d
COM2	—	COM	FM 1)	FM 2)	LW	AM 2)	—	1 adeg	COL	2b	2g	2c	—	3b	3g	3c

NO	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
COM1	3a	4f	4e	4d	4a	5g	5be	KHz	MEMORY BER	TIMER	7f	7e	7d	7a	MONO
COM2	—	4b	4g	4c	—	5 acdf	—	MHz DP	AUTO	K6	7b	7g	7c	SLEEP	—

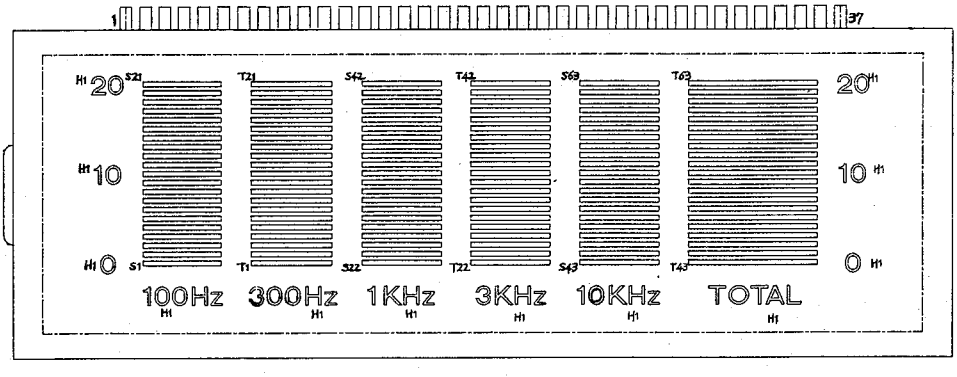
● LC7561A (LCD DRIVER) : QIC3


LC7561
D5 D4 D3 D2 D1 TEST 5 TEST 4 TEST 3 VDD TEST T2 COM2 COM1 VCC OSC TEST 1 f8
D6 D7 D8 D9 D10 D11 C1 C2 C3 C4 C5 C6 C7 C8 C9 C10
f7 f6 f5 f4 f3 f2 f1 A11 A10 A9 A8 A7 A6 A5 A4 A3
C11 VSS B1 B2 B3 B4 B5 VDD B6 B7 B8 B9 B10 B11 A1 A2

● BA3830S (BAND PASS FILTER) : QIC4



● LE-0008AP (EQ LCD)



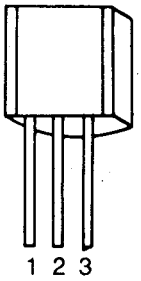
1	2	3	4	5	6	7	8	9
com1	*	*	S1	S 2 S 3	S 4 S 5	S 6 S 7	S 8 S 9	S 10 S 11
*	com2	*	T1	T 2 T 3	T 4 T 5	T 6 T 7	T 8 T 9	T 10 T 11
*	*	com3	*	*	*	*	*	*

10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37
S 12 S 13	S 14 S 15	S 16 S 17	S 18 S 19	S 20 S 21	S22	S23 S24	S 25 S 26	S 27 S 28	S 29 S 30	S 31 S 32	S 33 S 34	S 35 S 36	S 37 S 38	S 39 S 40	S 41 S 42	S 43	S 44 S 45	S 46 S 47	S 48 S 49	S 50 S 51	S 52 S 53	S 54 S 55	S 56 S 57	S 58 S 59	S 60 S 61	S 62 S 63	*
T 12 T 13	T 14 T 15	T 16 T 17	T 18 T 19	T 20 T 21	T22	T 23 T 24	T 25 T 26	T 27 T 28	T 29 T 30	T 31 T 32	T 33 T 34	T 35 T 36	T 37 T 38	T 39 T 40	T 41 T 42	T 43	T 44 T 45	T 46 T 47	T 48 T 49	T 50 T 51	T 52 T 53	T 54 T 55	T 56 T 57	T 58 T 59	T 60 T 61	T 62 T 63	*
*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	H1

2. CD

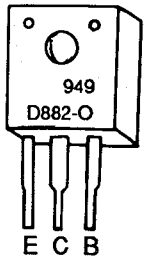
- TR

1)

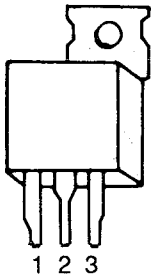


TR	1	2	3
KSA931, KSC2331, KSR2003 KSR1003, KSR1007	E	C	B
KSA708, KSB564, KSC945 KSC1008	E	B	C
MC79L05	G	IN	OUT

2) KSD882, KSB772

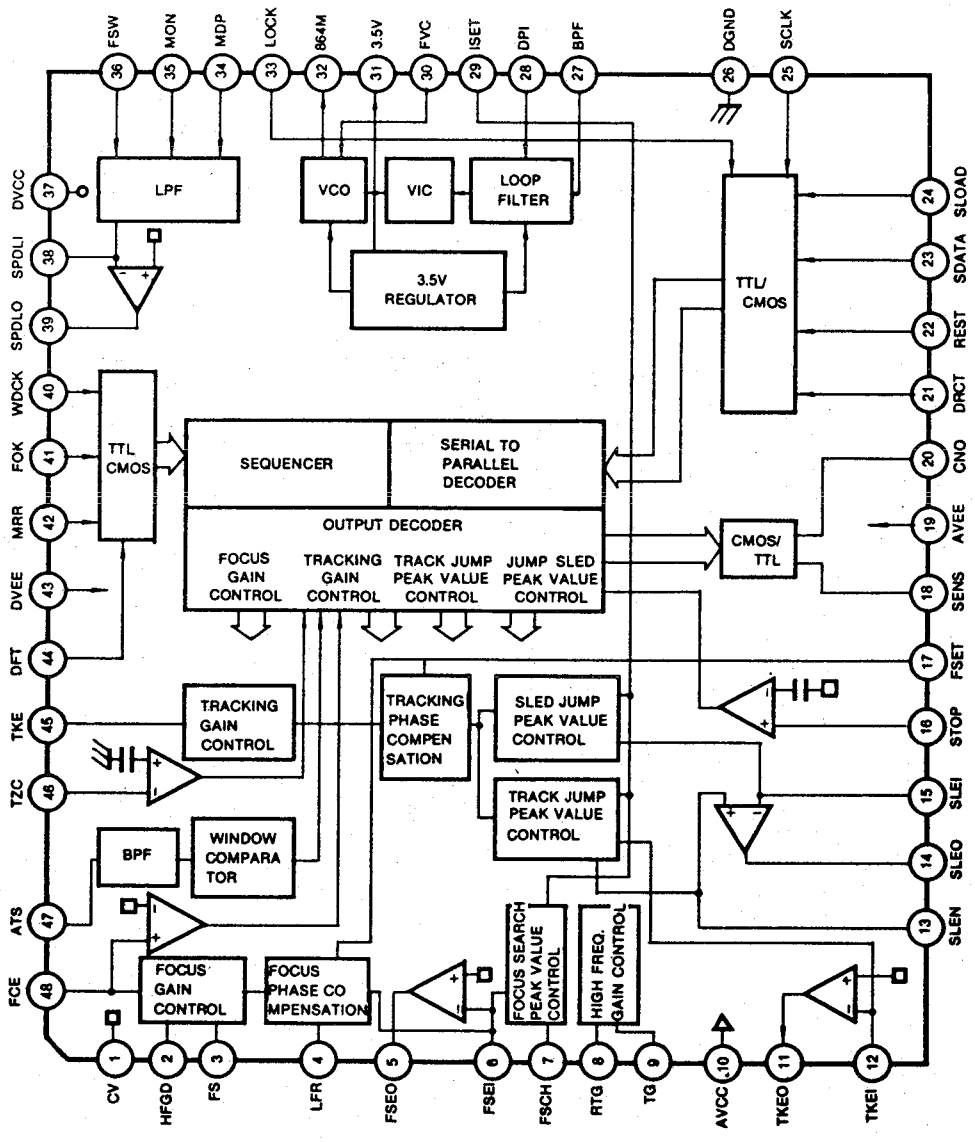


3)

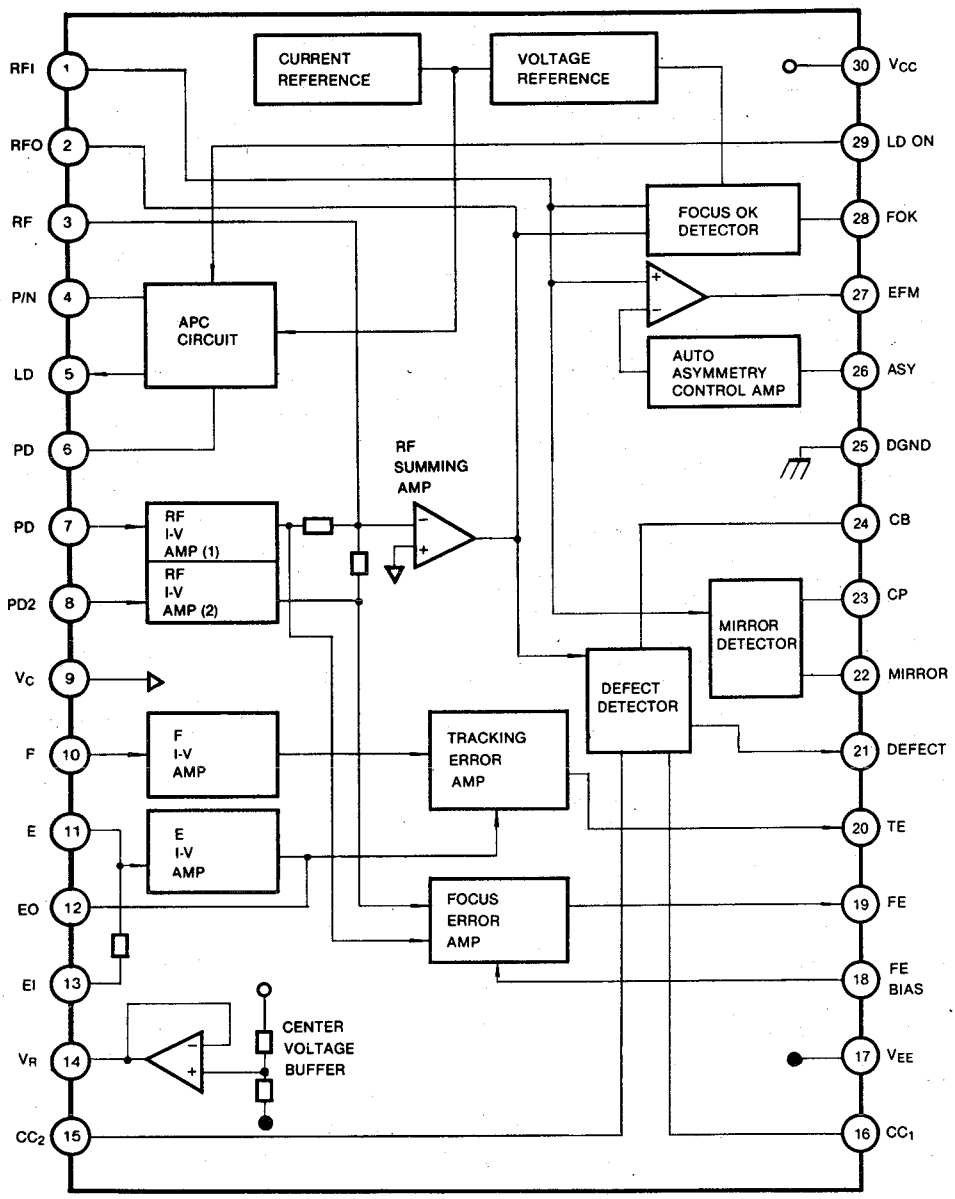


TR	1	2	3
MC78M05	IN	GND	OUT
KSA614	B	C	E

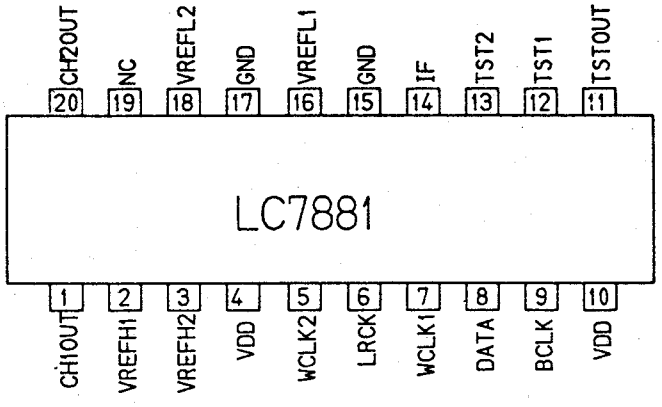
- KA830 (IC-SS PROCESSOR) : IC201



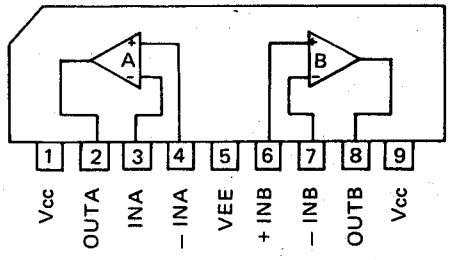
● KA9201 (RF AMP) : IC301



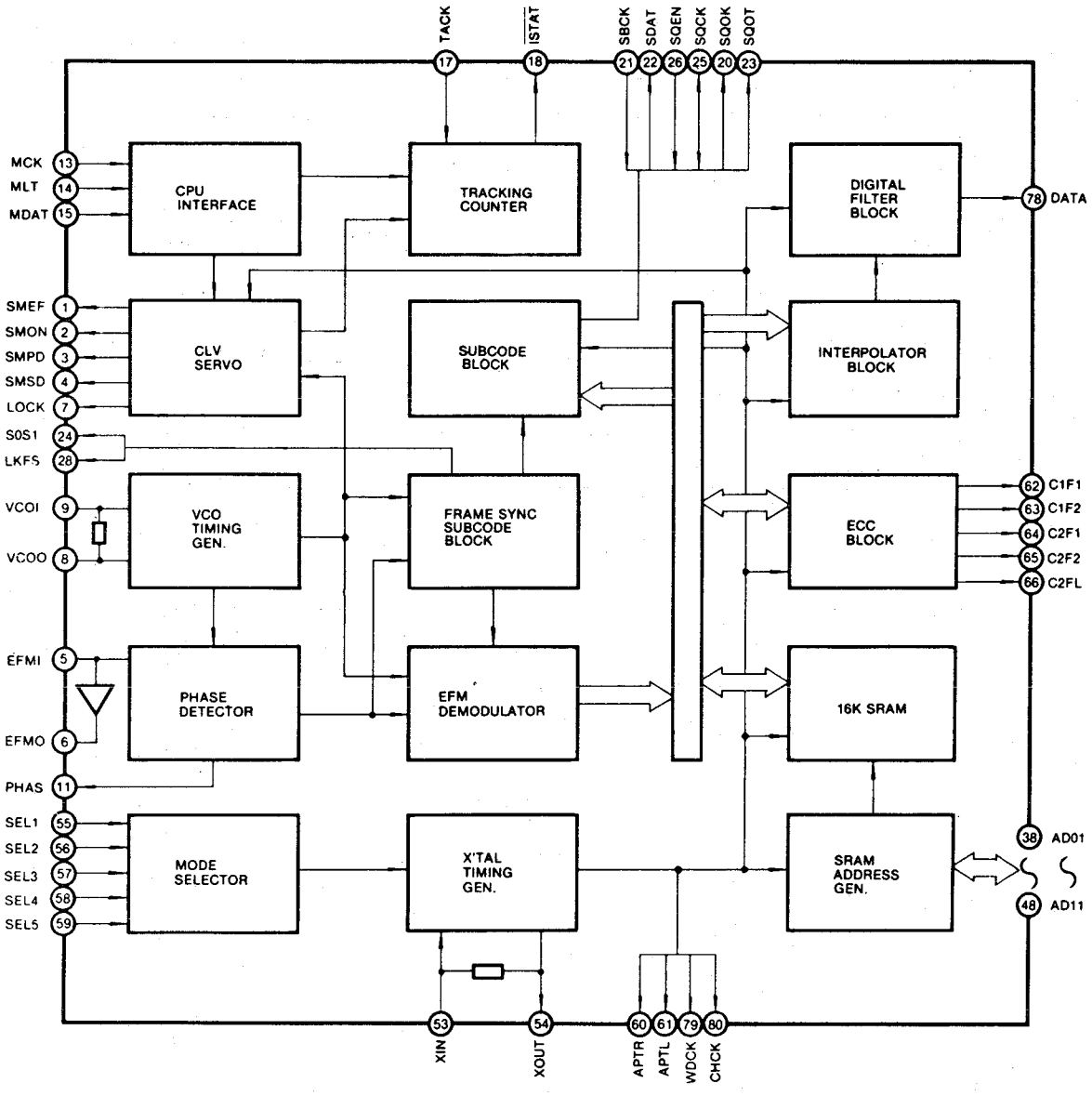
● LC7881 (D/A CONVERTOR) : IC501
* OPTIONAL



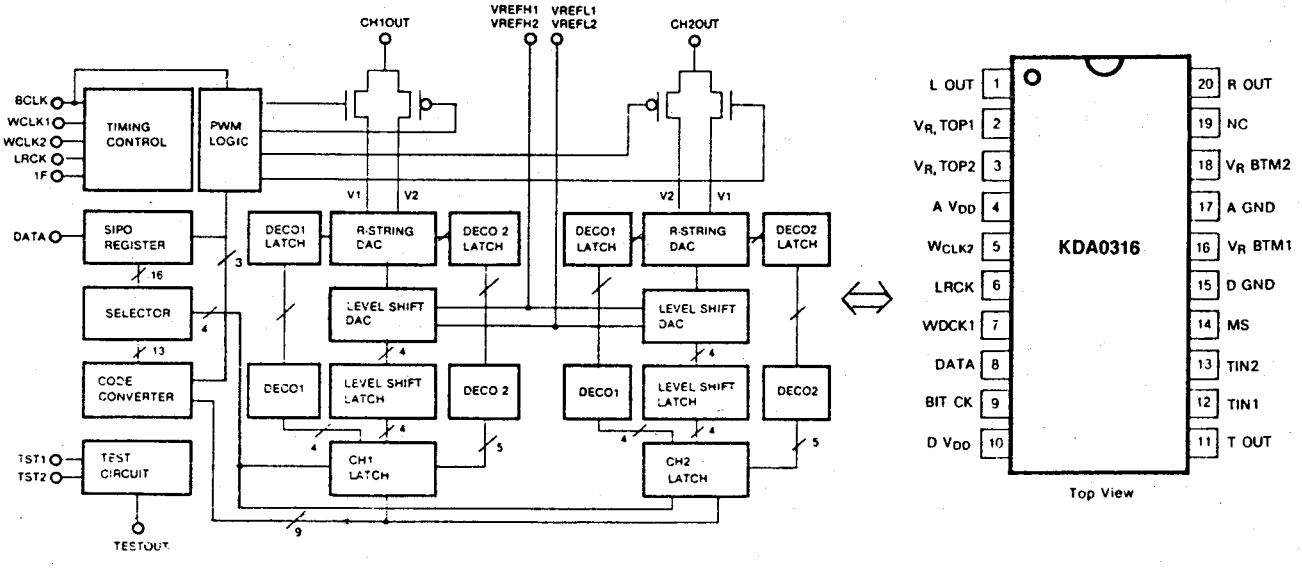
● NJM2068SD (OP AMP) : IC502, 503



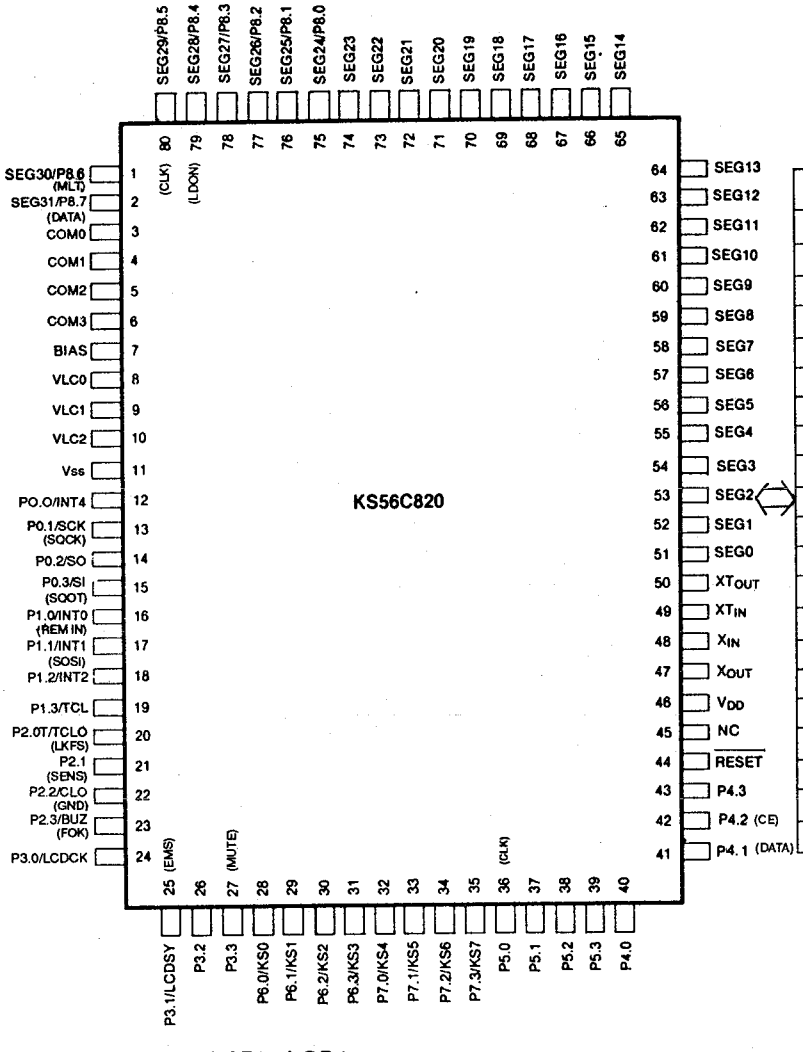
- KS5990/KS59910 (DIGITAL SIGNAL PROCESSOR) : IC401



- KDA0316LN (D/A CONVERTOR : IC501
  * OPTIONAL

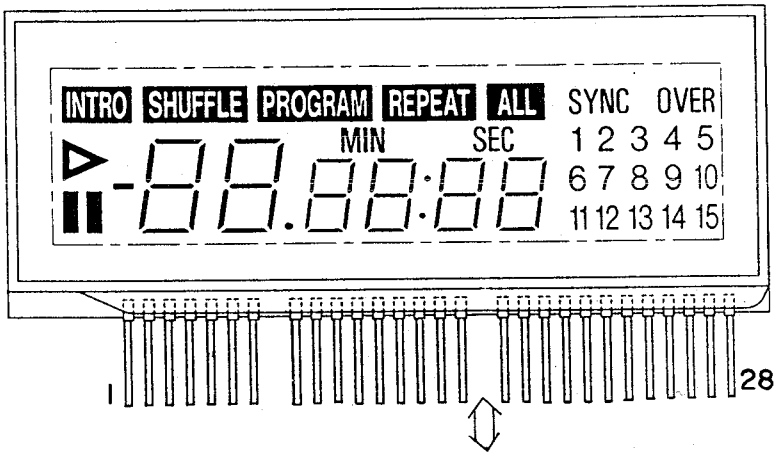


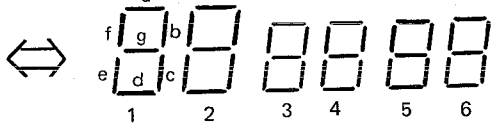
- KS56C820 (MICOM) : IC601



Pin Name	Pin description
P1.0-P1.3	4-bit Input
P2, P7	4-bit Input/Output
P3, P6	I/O mode selectable in 1-bit unit by software
P4, P5	4-bit input/output, N-ch open drain
P8.0-P8.7	Outputs in 1-bit unit (shared with segment outputs)
SEG0-SEG23	Segment output for LCD display
SEG24-SEG31	Segment output for LCD display (shared with Port 8)
COM0-COM3	Common signal output for LCD display
VLC0-VLC2	LCD power supply pin
BIAS	LCD power supply control pin for 3/5V operating
LCDCK	LCD clock output for display expansion
LCDSY	LCD sync. clock output for display expansion
TCL	Timer/Counter external clock input
TCLO	Timer/Counter clock output
INT0, 1, 2, 4	External interrupt input
CLO	Clock output
BUZ	2KHz clock output for buzzer
KS0-KS7	Semi-interrupt input detecting external falling edge
SCK, SI, SO	SCK: serial clock, SI: serial input, SO: serial output
XIN, XOUT	Crystal/Ceramic or RC clock I/O for Main-system clock
XTIN, XTOUT	Crystal clock I/O for sub-system clock

- HLC8036 (CD LCD) : LCD1



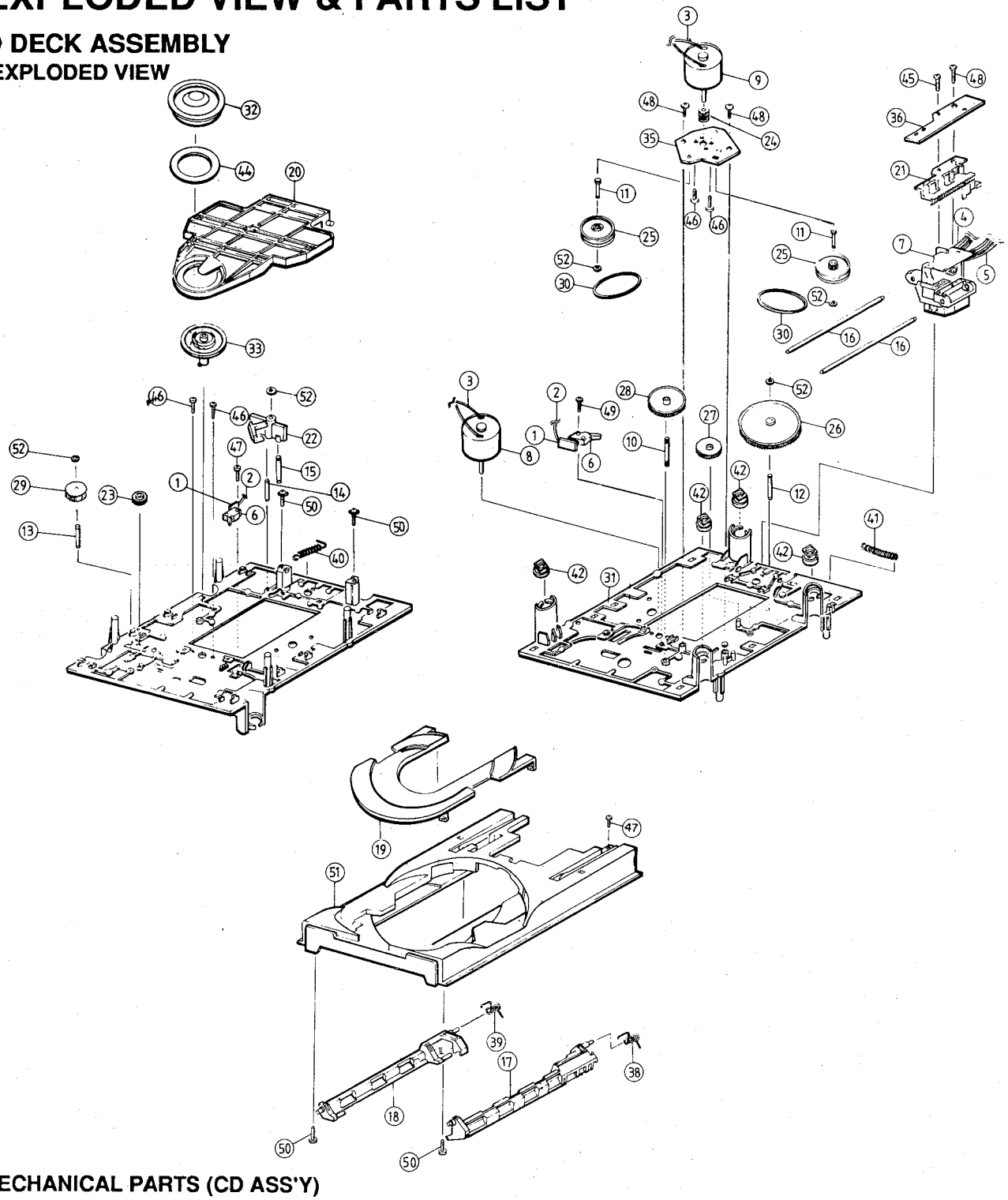


No.	COM. 1	COM. 2	COM. 3	No.	COM. 1	COM. 2	COM. 3	No.	COM. 1	COM. 2	COM. 3
1	COM.1			11	PROGRAM	3f	3e	20	SYNC	6f	6e
2		COM. 2		12	3 a	3g	3d	21	6 a	6g	6d
3			COM. 3	13	MIN	3b	3c	22	OVER	6b	6c
4	INTRO	▷	■■	14	REPEAT	4f	4e	23	1	6	11
5	—	1f	1e	15	4 a	4g	4d	24	2	7	12
6	1 a	1g	1d	16	:	4b	4c	25	3	8	13
7		1b	1c	17	ALL	5f	5e	26	4	9	14
8	SHUFFLE	2f	2e	18	5 a	5g	5d	27	5	10	15
9	2 a	2g	2d	19	SEC	5b	5c	28	N C		
10	•	2b	2c								

■ EXPLODED VIEW & PARTS LIST

1. CD DECK ASSEMBLY

● EXPLODED VIEW



● MECHANICAL PARTS (CD ASS'Y)

No.	CODE No.	DESCRIPTION & SPECIFICATION	Q'TY	REMARK
	14929-421-010	DECK-CD(DRAW) ; CMS-55/A	1	
1	13014-582-500	PCB-MICRO SW ; IVO	2	
2	13029-041-130	CONNECTOR ; 4PIN(SW)	1	
3	13029-041-230	CONNECTOR ;4PIN(MOTOR)	1	
4	13052-901-040	CONNECTOR ; 8PIN(SHIELD)	1	
5	13079-618-125	CONNECTOR ; 8PIN	1	
6	13579-901-010	MICRO-S/W;SSCTL1217A	2	

No.	CODE No.	DESCRIPTION & SPECIFICATION	Q'TY	REMARK
7	14239-101-110	SAMSUNG OPTICAL HEAD ; SOH89T1	1	
8	14769-057-240	MOTOR-SPINDLE ; RF-310T(SHAFT 18.9)	1	
9	14769-057-250	MOTOR-FEED ; RF-310T(SHAFT 10.9)	1	
10	15104-531-010	SHAFT-GEAR(C) ; SUM24L(SERRATION)SCM7550	1	
11	15104-531-110	SHAFT-GEAR(D) ; SUM24L SCM7550L	2	
12	15104-531-210	SHAFT-GEAR(A) ; SUM24L SCM7550L	1	
13	15104-531-220	SHAFT-GEAR(B) ; SUM24L SCM7550L	1	
14	15104-531-310	SHAFT-LEVER(A) ; SUM24L SCM7550	1	
15	15104-531-410	SHAFT-LEVER(B) ; SUM24L SCM7550	1	
16	15104-531-510	SHAFT-PU ; SUS 420J2 SCM7550	2	
17	15252-501-110	LEVER-LIFTER(R) ; P.B.T G15% SCM7550	1	
18	15252-501-210	LEVER-LIFTER(L) ; P.B.T G15% SCM7550	1	
19	15252-501-310	LIFTER-DISC ; ABS BLK SCM7550	1	
20	15252-501-410	COVER-DISC ; P.B.T G15% SCM7550	1	
21	15253-503-310	GUIDE-PU ; P.O.M SCM7550	1	
22	15253-503-410	LEVER-MAIN ; P.O.M SCM7550	1	
23	15254-509-110	GEAR-DOOR SLIDING(A) ; P.A NTR SCM7550	1	
24	15254-513-610	GEAR-MOTOR ; P.O.M SCM7550	1	
25	15254-513-710	GEAR-PU(A) ; P.O.M SCM7550	2	
26	15254-513-810	GEAR-PU(B) ; P.O.M SCM7550	1	
27	15254-513-910	GEAR-PU(C) ; P.O.M SCM7550	1	
28	15254-514-010	GEAR-DOOR(A) ; P.O.M SCM7550	1	
29	15254-514-310	GEAR-DOOR(C) ; P.O.M SCM7550	1	
30	15274-501-520	BELT-MOTOR ; NEOPLENE 1.2T SCM7550	2	
31	16021-504-710	BRKT MAIN(M) ; E. G T1.6+POM SCM7550	1	
32	16604-538-310	PLATE CHUCK ; P.O.M SCM7550	1	
33	16604-538-410	TURN-TABLE ; P.C G20% SCM7550	1	
35	16624-571-410	BRKT-MOTOR ; EG 1.2T SCM7550	1	
36	16624-571-910	BRKT-P/U ; SECC 1.0T SCM7550	1	
38	16674-560-510	SPRING-LIFTER R ; STSW #27 SCM7550	1	
39	16674-560-610	SPRING-LIFTER L ; STSW #27 SCM7550	1	
40	16674-560-710	SPRING-COVER ; STSW #27 SCM7550	1	
41	16674-560-810	SPRING-LEVER ; STSW #27 SCM7550	1	
42	16804-517-820	RUBBER-DECK ; BUTYL SCM7550	4	
44	16844-520-210	SHEET-CHUCK ; HYMERON T0.5 SCM7550	1	
45	17008-120-063	SCREW-PH ; +M2X6 FE FZB CFSW510	1	
46	17098-120-032	SCREW-BH ; +M2X3 FE FZW	4	
47	17108-520-063	SCREW-TAP PH ; 2S-2X6 FE FZB	1	
48	17148-526-081	SCREW-TAP, RH ; 2S-2.6X8 FE FZY	3	
49	17158-220-103	SCREW-TAP, BH ; 2-2X10 FE FZB	2	
50	17558-230-081	SCREW-TAP TITE SPEC ; S-3 X 8FZY	4	
51	17641-500-810	DOOR-DISC ; ABS BLK	1	
52	18314-500-810	RING-O ; POLY SLIDER PI1.2 SCM7550	5	

* Parts which are not discribed in the CD DECK list are not serviceable.
If you need any other parts except those described, apply CD DECK assembly.

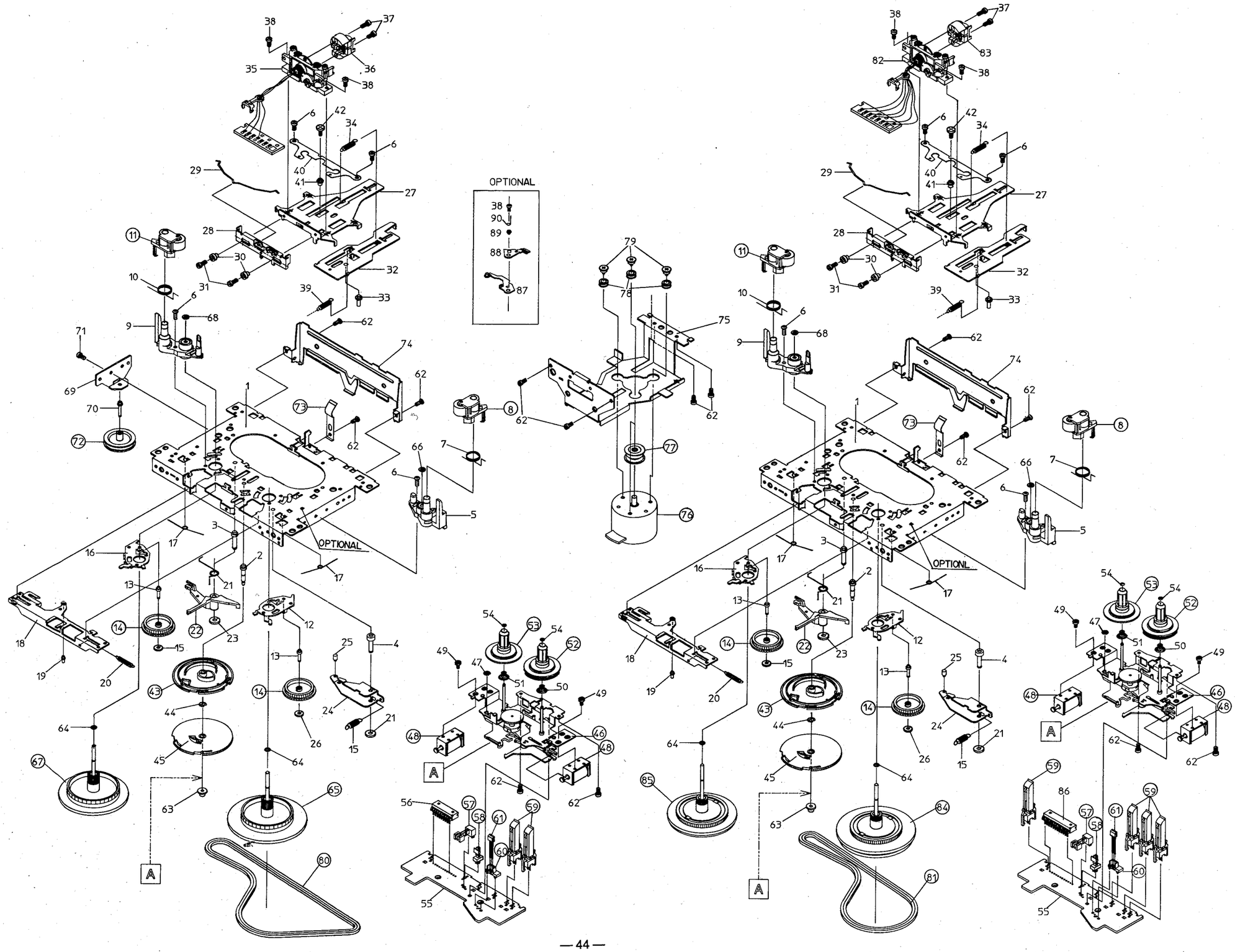
2. CASSETTE DECK ASSEMBLY

● MECHANICAL PARTS LIST

No.	CODE No.	DESCRIPTION & SPECIFICATION	Q'TY	REMARK
	14929-104-111	DECK-TAPE ; ADR 1903W, SCM-8550		
8	10000-609-108	ASSY-ARM PINCH F ; ADR26-011	2	
11	10000-609-111	ASSY-ARM PINCH R ; ADR26-012	2	
14	10000-609-114	GEAR-FWD ; 11128-00520AA	4	
22	10000-609-122	ARM-CAM LOCK P ; 11102-00780AA	2	
43	10000-609-143	GEAR-CAMP ; 11128-00530AA	2	
46	10000-609-146	ASSY-CHASSIS REEL ; ADR12-034	2	
48	10000-609-148	SOLENOID ; 79840-00002AA	4	
52	10000-609-152	ASSY-REEL F ; ADR28-005	2	
53	10000-609-153	ASSY-REEL R ; ADR28-006	2	
57	10000-609-157	SWITCH (RF) ; 70022-02040DA	2	
58	10000-609-158	SWITCH (P) ; 70022-02041CA	2	
59	10000-609-159	SWITCH (TAPE) ; 70022-02042DA	6	
60	10000-609-160	HOLDER SENSOR ; 11130-00160AA	2	
61	10000-609-161	HALL IC ; 69801-99002ZA	2	
65	10000-609-165	ASSY-FLYWHEEL F(D) ; ADR15-014	1	
67	10000-609-167	ASSY-FLYWHEEL R(D) ; ADR15-015	1	
72	10000-609-172	PULLEY-SUB ; 11145-00540AA	1	
73	10000-609-173	SPRING-PLATE ; 51299-02506XC	2	
76	10000-609-176	MOTOR (MABUCHI) ; 71650-12010AA	1	
77	10000-609-177	PULLEY-MOTOR D ; 11145-00530AA	1	
80	10000-609-180	BELT 1 (ø91.5) ; 51428-09113BA	1	
81	10000-609-181	BELT 2 (ø 80) ; 51428-08013BA	1	
84	10000-609-184	ASS'Y-FLYWHEEL F ; ADR15-0012	1	
85	10000-609-185	ASS'Y-FLYWHEEL R ; ADR15-0013	1	

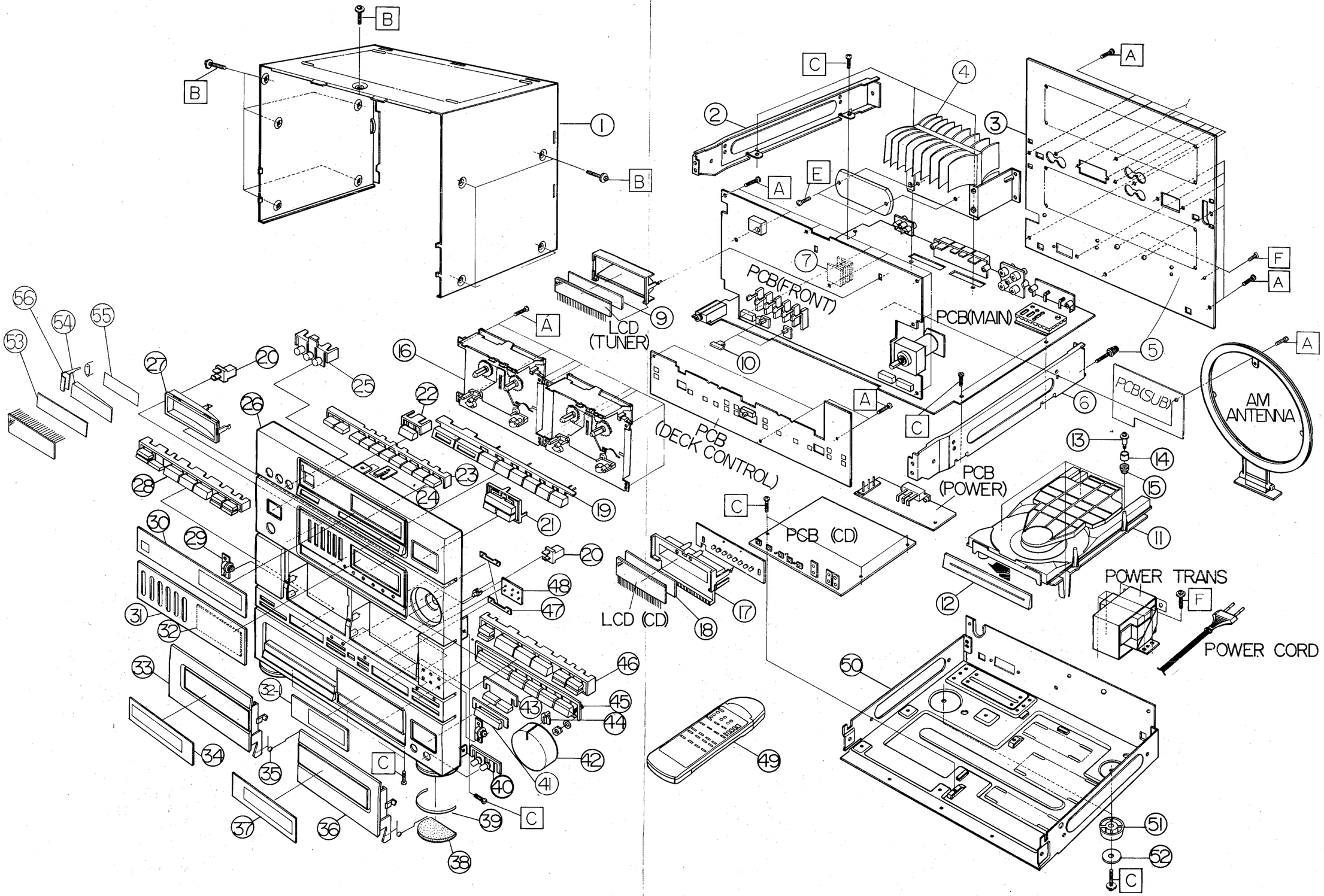
* Parts which are not discribed in the CASSETTE DECK list are not serviceable.
If you need any other parts except those described, apply CASSETTE DECK assembly.

● **EXPLODED VIEW (CASSETTE DECK)**



3. MAIN

- **EXPLODED VIEW**



● MECHANICAL PARTS LIST (MAIN)

<MAIN>

No.	CODE No.	DESCRIPTION & SPECIFICATION	Q'TY	REMARK
1	16100-500-220	CABINET-TOP ; VINYL STEEL 0.75T SCM6900	1	
2	16122-536-010	FRAME-L ; SECC 0.8T SCM6900	1	
3	16131-501-610	COVER-REAR ; H-BOARD 3.2T 110/220V	1	OPTIONAL
4	15682-504-110	HEAT-SINK ASSY ; AL SKIVE SCM8900	1	
5	13104-501-630	TERMINAL-SCREW ; SPC1 + ABS BLK V	1	
6	16122-536-110	FRAME-R ; SECC 0.8T SCM6900	1	
7	15684-507-610	HEAT-SINK ; EXTRA AL WHT	2	
9	12309-110-260	LED BACK LIGHT ; KLS-0540SA	1	
10	17624-622-010	KNOB-PUSH ; ABS 94HB BLK SCM6900	2	
11	14929-421-010	DECK-CD (DRAW) ; CMS-55/A	1	
12	17643-525-470	DOOR-GUIDE ; ABS BLK (GOLD)	1	
13	17094-504-310	SCREW-STUD (B) ; TAP 2S-3 x 8	4	
14	16804-517-820	RUBBER-DECK ; BUTYL SCM7550	4	
15	16674-570-320	SPRING-DECK (B) ; STSW # 27	4	
16	14929-104-111	TAPE-DECK ; ADR1903W SCM8550	1	
17	16601-500-710	HOLDER-CD LCD ; ABS WHT + Ti02	1	
18	17654-571-810	FILTER CD LCD ; PC0.5T MILKY WHT	1	
19	17622-505-610	KNOB-FUNCTION, A ; ABS 94HB BLK	1	
20	16604-538-210	DOOR-RATCH ; KIFCO LA701	2	
21	17622-504-510	KNOB-TUNER ; ABS BLK SILK SCM7800	1	
22	17622-502-310	KNOB-POWER ; ABS 94HB BLK SCM6900	1	
23	17622-505-310	KNOB-PRESET ; ABS 94HB BLK	1	
24	16624-563-810	BRKT-FRONT ; SBHG 1.0T VIP590	1	
25	17623-588-910	KNOB-TIMER ; ABS 94HB BLK	1	
26	16000-537-110	PANEL-FRONT ; HIPS BLK SCM8900 CIP	1	OPTIONAL
27	16602-504-210	HOLDER-SPECTRUM ; ABS WHT + Ti02	1	
28	17622-505-410	KNOB-DECK, A ; ABS 94HB BLK	1	
29	15214-506-011	DAMPER ASS'Y ; ACETAL PD790	2	
30	17643-531-210	WINDOW-TUNER ; PVC 1.0T	1	
31	17643-531-110	WINDOW-SPECTRUM ; PVC 1.0T	1	
32	17654-571-510	MASK-SPECTRUM ; PC0.5T	1	
32-1	17644-525-710	WINDOW-CD ; PVC1.0T	1	
33	17642-545-710	DOOR-CASSETTE, A ; PVC1.0T	1	
34	17644-525-510	WINDOW-DOOR, A ; PVC1.0T	1	
35	16674-572-510	SPRING-DOOR (D) ; SUS-304 MQ1310D	2	
36	17642-545-810	DOOR-CASSETTE, B ; ABS BLK CIP	1	
37	17644-525-610	WINDOW-DOOR, B ; PVC1.0T	1	
38	16174-504-210	COUSHIPON-FOOT ; RUBBER SPONGE 4T	2	
39	17824-526-710	DECO-FOOT ; AL 0.3T GOLD	2	
40	17623-588-410	KNOB-CD, INTRO ; ABS BLK SCM7800	1	
41	17622-504-810	KNOB-CD, PLAY ; ABS BLK SILK SCM7800	1	
42	17623-575-410	KNOB-VOLUME ; ABS 94HB BLK SCM6900	1	
43	17622-504-910	KNOB-CD , SKP ; ABS BLK SILK SCM7800	1	
44	17644-517-220	LENS-VOLUME ; ACRYL RED	1	
45	17622-505-010	KNOB-CD FUNCTION ; ABS BLK SCM7800	1	
46	17622-505-510	KNOB-DECK, B ; ABS 94HB BLK	1	
47	17643-530-410	LENS-KNOB ; PMMA	1	
48	17643-530-310	LENS-DECK ; PMMA	1	
49	14909-501-110	REMOCON ASS'Y ; SCM6900	1	
50	16100-504-410	CABINET-BOTTOM ; SECC 0.8T SCM8900	1	
51	16074-503-010	HOLDER-FOOT ; HIPS BLK	2	
52	16804-521-710	FOOT-CONTECT ; EVA RUBBER	2	
53	17654-572-010	FILTER-SPECTRUM ; PC 0.5T AMBOR	1	
54	17643-531-410	LENS-SPECTRUM ; ACRYL	1	
55	16854-522-710	SPEACER-SPACTRUM ; PAPER	1	
56	16624-579-310	BRKT-LAMP ; TE SBC 0.3T	1	
A	17458-230-101	SCREW-TAP TITE BH ; 2S-3 x 10 FE FZY	46	
B	17458-230-130	SCREW-TAP TITE BH ; B-3 x 10 FZB	10	
C	17154-100-630	SCREW-TAP RH SPEC ; 2S-3 x 8 FE FZY	4	
E	17448-130-201	SCREW-TAP TITE BH ; 2S-3 x 20 FE FZY	2	
F	17128-540-083	SCREW-TAP RH ; 2S-4 x 8 FE FZB	6	

■ ELECTRICAL PARTS LIST

⚠ indicates parts for circuit safeguarding purposes. Therefore, when replacing, be sure to use specified parts only.

LOCATION No.	CODE No.	DESCRIPTION & SPECIFICATION	Q'TY	REMARK
	12109-310-810	IC-REMOCON ; LC7461-8103	1	REMOTE CONTROL HANDSET
	12149-301-900	TRANSISTOR ; KSC 945-Y, TAPE	1	REMOTE CONTROL HANDSET
	14539-504-030	CERAMIC-RESONATOR ; CSB455EBL	1	REMOTE CONTROL HANDSET
LR2	11048-477-102	R-METAL OXIDE ; RS1T 1K-J MINI TYPE	1	⚠
LR1, RR12, 13	11048-477-151	R-METAL OXIDE ; RS1T 150-J MINI TYPE	3	⚠
AR7L, 7R	11048-477-479	R-METAL OXIDE ; RS1T 4.7-J MINI TYPE	2	⚠
RR23	11048-577-331	R-METAL OXIDE ; RS2T 330-J MINI TYPE	1	⚠
AR12, 9	11058-223-101	R-FUSIBLE ; CRF 1/4W 100-J	2	⚠
RR3, 4, 14	11058-477-109	R-FUSIBLE ; RF 1T 1-J	3	⚠
JSVR1L, 1R	11249-102-014	VR-SEMI TAPE-H ; DVN-DJA A03B52 (500)	2	
DSVR1L, 1R	11249-102-044	VR-SEMI TAPE-H ; DVN-DJA A03B24 (20K)	2	
KVR1L, 1R, IVR3, ISVR1	11249-102-064	VR-SEMI TAPE-H ; DVN-DJA A03B54 (50K)	4	
CSVR1, 3	11249-112-010	SEMI-VR ; RH0615C100 222 (2.2KB)	2	
LSVR1R, 1L	11249-112-210	VR-SEMI ; RH0615C100 224 (220KB)	2	
IC1	11448-010-223	CONDENSER AXIAL-LEAD ; 25V TP 050F22000-Z	1	
BC3L, 3R, FC5	11449-117-150	CONDENSER AXIAL-LEAD ; 50V UP 050 SL15-J	3	
PC4L, 4R	11449-117-470	CONDENSER AXIAL-LEAD ; 50V UP 050 SL47-J	2	
KC1L, 1R	11449-518-681	CONDENSER AXIAL-LEAD ; 50V UP050 B680-K	2	
RC7, 8, 9, 11, UC3, IC18 RC10, PC7, PC9	11608-103-471	C-ELECTROLYTIC ; SMS T 16V 470M (10 x 12.5)	9	⚠
RC13, 15	11609-105-222	C-ELECTROLYTIC ; SMS T 35V 2200M (16 x 31.5)	2	⚠
RC14	11609-103-472	C-ELECTROLYTIC ; SMS T 16V 4700M (16 x 31.5)	1	⚠
RC4, 12	11609-106-472	C-ELECTROLYTIC ; 4700U/50V	2	⚠
FTC1, 4	11829-512-030	C-TRIMMER ; TZ03R 20PF	2	
FTC2, 3	11829-512-030	C-TRIMMER ; TZ03R 20PF	2	LW BAND
IC4	12109-323-990	IC-DOLBY ; KA2271	1	
UDIC1	12109-401-200	IC-U COM ; LC66508-4517	1	
IC10	12109-401-270	IC-FUNCTION ; LC7821	1	
RIC1, 2	12109-401-690	IC-REGULATOR ; MC7812C	2	
IC2	12119-102-050	IC-EQ ; BA3312N	1	
KIC1	12119-102-330	IC-TR ARRY ; BA6251	1	
IIC1	12119-102-720	IC AM, FM IF ; LA1851N	1	
IC9	12119-201-610	IC-AMPS ; LA2010	1	
IC6	12119-201-840	IC-PLAY ; LA3246	1	
IC3	12119-205-050	IC-POWER ; STK-4191-V	1	
IC7	12119-401-170	IC-OP AMP ; MC4558C	1	
IC20	12119-401-760	IC-OP AMP ; NJM2068SD/UPC4570HA	1	
RIC4	12119-601-170	IC-VOLT REGULATOR ; MC78M05	1	
RQ7, 3	12139-103-560	TRANSISTOR ; KSA 614-O	2	
FQ7, 8	12139-601-200	TRANSISTOR SILICON ; 2SK, 583	2	
FQ5, 6	12149-101-520	TRANSISTOR ; KSA733-Y, TAPE	2	
LQ2, 4, CQ1, KQ10	12149-101-560	TRANSISTOR ; KSA708-Y, TAPE	4	
UQ1, 2, 5, 6, CQ3	12149-202-050	TRANSISTOR ; KSB564A-Y-	5	
KQ2L, 2R	12149-301-820	TRANSISTOR ; KSC1222-L, TAPE	2	
IQ1	12149-301-860	TRANSISTOR ; KSC838-O, TAPE	1	
UQ6, RQ1, 2, 4, AQ1L, 1R, KQ1L, 1R, CQ2, FQ4	12149-301-900	TRANSISTOR ; KSC 945-Y, TAPE	10	
FQ2, 3	12149-301-900	TRANSISTOR ; KSC 945-Y, TAPE	2	LW BAND
LQ1	12149-301-910	TRANSISTOR ; KSC2331-Y, TAPE	1	

LOCATION No.	CODE No.	DESCRIPTION & SPECIFICATION	Q'TY	REMARK
RQ6, UQ17, KQ14L KQ14R, KQ15L, 15R	12149-301-930	TRANSISTOR ; KSC1008-Y, TAPE	6	
RIC3	12149-401-070	TRANSISTOR ; KSD73-Y	1	
UQ14, 15, 16, KQ6	12159-301-330	TR-DIGITAL ; KSR2003, TAPE	4	
IQ2	12159-301-760	TR DIGITAL ; KSR2004	1	
UQ3, 4, 7, 8, 10 ~ 13, 18 KQ1L, 1R, KQ7, 8, 11 DQ1, DQ3L, 3R, LQ3, 5 CQ5, IQ3, 4	12159-301-780	TR DIGITAL ; KSR1003	22	
UD2, 31 ~ 34 RD8 ~ 11, 60, 61	12169-201-080	DIODE-RECTIFIER ; 1N 4001, TAPE	11	
RD4	12169-209-150	DIODE BRIDGE ; 3N246 1A 50V	1	
RD1	12169-219-330	DIODE-BRIDGE ; PBL403	1	
UD1, 2, 23, 24, 27, 28, 30 UD31, 35, 40, 41, 42, 50 HD50 ~ 53, KD1, 2, 4, 8, CD1, UD37, 38, 39, DR13, RD16, 15, 12, 9, JD1, HD54, 55	12169-301-290	DIODE-SW ; 1SS53/1N4148, CT : 6PF	33	
RD3, 4	12169-403-210	DIODE-ZN ; RD4.7F	2	
RD51	12169-403-570	DIODE-ZN ; UZP2.4B	1	LW BAND
RD5, 6	12169-403-910	DIODE-ZN ; 1W11.4-12.6V UZP-12B	2	
RD12, UD26, 29	12169-404-110	DIODE-ZN ; RD5.6FB/UZP-5.6B	3	
FD1	12169-501-005	DIODE ; KV 1236	1	
AL1L, 1R	12429-060-031	COIL-CHOKE, SPK ; 2R2UH-K F7R9 RD 1/4P 10-J	2	
LL1	12429-070-130	COIL-CHOKE ; 470UH R-TYPE	1	
IIFT1	12619-020-067	COIL 7 CAN ; AB FM BLU	1	
IIFT2	12619-030-005	COIL-CAN ; AC 450KHz YEL	1	
FIFT4	12619-047-202	COIL-CAN ; AD 510UH 220KHz BRN	1	LW BAND
FIFT3	12619-047-205	COIL-CAN/STICK ; AD 110UH 796KHz RED	1	
KR1R, KL1L	12619-053-911	COIL-CAN ; AE 4.7MH 252KHz BLK	2	
KL2L, 2R	12619-057-417	COIL-CAN ; AE 6.8MH 252KHz BLK	2	
FIFT1	12619-411-000	MW ANT COIL ; 207BLRZ-K5026N-KR	1	
FIFT2	12619-566-913	TRANS-TEN, CAN ; AF 2.4MH FLW RED	1	LW BAND
LL2	12619-577-771	BIAS OSC ; PCHNS-5371EQJ	1	
DBP1L, DBF1R, KBPF1L, 1R	12619-636-474	COIL CAN ; AM 2.2M MF NON STICK	4	
SPK	13303-500-623	TERMINAL-BOARD PUSH ; N 4P STICK	1	
AUX/PHONO	13337-417-080	JACK-AUX ; 4P 38MM	1	
H.P	13339-101-610	JACK-HEADPHONE ; HLJ4306-01-3040	1	
SURROUND	13339-417-030	JACK-RCA ; 2P (S-434)	1	
ICF5, 6	14529-304-610	FILTER CERAMIC ; AHCM2-450BL	2	
DBF2L, 2R	14529-414-050	FILTER-LOW PASS ; 10MM 19K/105KHz	2	
UX1	14534-504-040	CERAMIC-RESONATOR ; CSA4.00MG	1	
ICF4	14539-504-100	CERAMIC RESONATOR ; CSB456F15	1	
ANT-TEM	13304-504-010	ANT TER, BOARD ; A02-1064	1	
F1	14519-817-060	FM TUNER PACK ; UT4021 FTZ	1	OPTIONAL (FTZ)
F1	14519-809-040	FM FRONTEND PACK ; F 3615 (300)	1	OPTIONAL
ICF1, 2, 3	14529-301-750	FILTER-CERAMIC ; SFE 10.7MS3G-A	3	OPTIONAL
	14529-301-760	FILTER-CERAMIC ; SFE 10.7MA8H-A	3	OPTIONAL
	14529-302-950	CERAMIC FILTER ; SFE 10.7MJK-A	3	OPTIONAL

2. FRONT SECTION

LOCATION No.	CODE No.	DESCRIPTION & SPECIFICATION	Q'TY	REMARK
QIC3	12109-310-830	IC-LCD DRIVER ; LC7561A	1	
QIC4	12119-102-480	IC-BPF ; BA3830S	1	
QIC5	12119-601-770	IC-REGULATOR ; MC7805	1	
QQ1	12149-301-900	TRANSISTOR ; KSC 945-Y, TAPE	1	
QD51 ~ 58	12169-301-290	DIODE-SW ; 1SS53/1N4148, CT : 6PF	8	
QD60, 59	12169-403-200	DIODE-ZN ; RD407E/UZ 4.7BM	2	
QD61	12169-403-690	DIODE-ZN ; 500MW UZ-6.8 BH	1	
MAIN	11219-153-030	VR-MOTOR ; RK16Y12MA 1L1 14B	1	
QVR1, 2, 3, 4, 5	11239-115-033	VR-EQ ; RS20H123J304 53B/STICK	5	
QVR6	11239-115-043	VR-BAL ; RS20H114J30453W/STICK	1	
QC7L, 7R	11447-619-332	CONDENSER AXIAL-LEAD ; 16V EP050 X3300-M	2	
QC9L, 9R	11447-619-682	CONDENSER AXIAL-LEAD ; 16V EP050 X6800-M	2	
HC50	11447-919-103	CONDENSER AXIAL-LEAD ; 16V EP050 Y10000	1	
HC41, QC2R, 2L, 6L, 6R	11449-010-473	CONDENSER AXIAL-LEAD ; 50V UP F47000-Z	5	
QC12R, 12L	11449-117-470	CONDENSER AXIAL-LEAD ; 50V UP 050 SL47-J	2	
HC4, QC8L, 8R, QC50L, 50R, HC5	11449-518-102	CONDENSER AXIAL-LEAD ; 50V UP050 B1000-J	7	
QC20R, 20L	11449-518-561	CONDENSER AXIAL-LEAD ; 50V UP050 B560-K	2	
HC7	11609-365-473	GOLD CAPACITOR ; EEC-S5R5H473 (5.5V0.047F)	1	
EQ LAMP	12059-320-900	LAMP-PILOT ; 12V 110MA T-4.1	1	
UIC1	12109-401-390	IC-DTS PLL ; LC7232-8380	1	
QIC1	12119-202-880	IC-LINER ; KA22234 (5G/EQ)	1	
HIC2	12119-203-890	IC-HCT ; TC74HC375 AF	1	
QIC2	12119-401-170	IC-OP AMP ; MC4558C	1	
HQ4, 5, 9	12149-101-560	TRANSISTOR ; KSA708-Y, TAPE	3	
HQ8	12149-301-900	TRANSISTOR ; KSC 945-Y, TAPE	1	
HQ6, 7	12149-301-930	TRANSISTOR ; KSC1008-Y, TAPE	2	
HQ1	12159-301-330	TR-DIGITAL ; KSR2003, TAPE	1	
HQ4	12159-301-760	TR DIGITAL ; KSR2004	1	
HQ3, 2	12159-301-780	TR DIGITAL ; KSR 1003	2	
HD50, 51	12169-201-080	DIODE-RECTIFIER ; 1N 4001, TAPE	2	
HD2, 4, 5, 9, 11 ~ 14, 20 ~ 22 HD26, 28, 51, 52, HR4 JW305	12169-301-290	DIODE-SW ; 1SS53/1N4148, CT : 6PF	17	
HD40	12169-403-290	DIODE-ZN ; 50MW7.7-8.7V UZ-8.2BM	1	
HEYE1	12199-101-050	REMOCON EYE ; GP1U501 x 1 701R	1	
HLED 1 ~ 4, 6 HLED5, ULED1 ~ 4 ULED5, AR1 ~ 3 LONG P, P PLAY, B PLAY	12309-001-220	LED ; SLV31VC TAPE	17	
LCD1	12339-101-120	LCD ; 8190JP	1	
EQ LCD	12339-104-790	LCD-EQ ; LE-0008AP	1	
FUSE CL	13164-101-913	CLIP-FUSE ; PBP 3-1/2H T0.3 SN	4	
DOLBY	13519-201-320	SW-SLIDE ; SSJ622	1	
CFBS, SURROUND	13529-203-930	SW-PUSH ; SPEA122S C011	2	
UP, DOWN, MEMORY, MODE, P8/9 P7/15, P6/14 P5/13, P4/12, P3/11 P2/10, P1/9, BAND, AUTO, SLEEP CLOCK, TIMER, POWER, MUTE, PHONO, TUNER, TAPE, AUX, CDP, A L.PLA, A REV, A FWD, A R PLY, A STOP, A F PLAY, AUTO RV, CD SYN, N DUB, H DUB, REC MUT, B PAUSE, B R PLY, B STOP, B F PLAY, B REV, B FWR, B F REC, B R REC	13559-901-100	SWITCH-TACT ; SKHVBE029A	43	
HX1	14539-003-010	CRYSTAL-UNIT ; HC18-U4.5MHz	1	

3. CD SECTION

LOCATION No.	CODE No.	DESCRIPTION & SPECIFICATION	Q'TY	REMARK
R101, 102	11058-277-229	R-FUSIBLE ; RF 1/4T 2.2-J	2	⚠
R109, 110	11058-377-011	R-FUSIBLE ; RF 1/2T 1-J	2	OPTIONAL
R104	11058-277-479	R-FUSIBLE ; RF 1/4T 4.7J	1	⚠
VR201	11249-002-120	VR-SEMI FIXED ; VZ068TLT 1KB HDK H TYPE	1	OPTIONAL
	11249-002-080	VR-SEMI FIXED VZ066L, 1KB, HDK	1	OPTIONAL
VR301 ~ 304	11249-102-044	VR-SEMI TAPE-H ; DVN-DJA A03B24 (20K)	4	
C307	11447-619-222	CONDENSER AXIAL-LEAD ; 16V EP050 X2200-M	1	
C305, 313, 404, 604	11447-919-103	CONDENSER AXIAL-LEAD ; 16V EP050 Y10000-M	8	
C540, 545, 609, 610				
C215, 303	11449-518-102	CONDENSER AXIAL-LEAD ; 50V UP050 B1000-K	2	
C524, 525	11608-104-104	C-ELECTROLYTIC ; SMS T 25V 100M (6.3 x 11)	2	
C103, 104	11608-104-222	C-ELECTROLYTIC ; SMS 25V 2200M (12.5 x 25)	2	
IC601	12109-303-690	IC-MICOM ; KS56C820-06	1	
IC501	12109-401-310	IC-D/A CONVERTER ; KDA0316LN	1	OPTIONAL
IC501	12109-310-840	IC-D/A CONVERTER ; LC7881-C	1	OPTIONAL
IC102	12109-401-750	IC REGULATOR ; MC79L05	1	⚠
IC401	12119-203-770	IC-DS PROCESSOR ; KS5990/KS59910	1	
IC301	12119-203-790	IC-RF AMP ; KA9201	1	
IC201	12119-203-840	IC-SS PROCESSOR ; KA830 DUAL VOLTAGE	1	
IC502, 503	12119-401-760	IC-OP AMP ; NJM2068SD/UPC4570HA	2	
IC101	12119-601-770	IC-REGULATOR ; MC7805	1	⚠
Q206, 209	12149-101-560	TRANSISTOR ; KSA708-Y, TAPE	2	
Q101	12139-103-560	TRANSISTOR ; KSA614-O	1	
Q204, PQ2	12149-101-590	TRANSISTOR ; KSA931-Y, TAPE	2	
Q202	12149-201-480	TRANSISTOR ; KSB 772-Y	1	
Q301	12149-202-050	TRANSISTOR ; KSB564A-Y-	1	
Q500, 501, 503, 504	12149-301-900	TRANSISTOR ; KSC 945-Y, TAPE	6	
Q601, PQ1				
Q203, PQ3	12149-301-910	TRANSISTOR ; KSC2331-Y, TAPE	2	
Q205, 208	12149-301-930	TRANSISTOR ; KSC1008-Y, TAPE	2	
Q201	12149-401-950	TRANSISTOR ; KSD 882-Y	1	
Q506, 507	12159-301-330	TR-DIGITAL ; KSR2003, TAPE	2	
Q505	12159-301-780	TR DIGITAL ; KSR 1003	1	
Q207	12159-301-800	TR DIGITAL ; KSR 1007	1	
D101 ~ 104, 606, PD1, 2	12169-201-080	DIODE-RECTIFIER ; 1N 4001, TAPE	7	
D301, 601 ~ 605, 805	12169-301-400	DIODE-SWITCH ; 1N4148M ROHM (SMALL)	7	
ZD101	12169-404-790	DIODE ZENER ; 500MW UZ-5.6BSB TAPING	1	
LED1 ~8	12309-117-520	LED-AMBER ; SEL3913K TP5 TAPPING	8	
LCD1	12339-102-320	LCD-CD ; HLC8036-012310	1	
SW1 ~ 5	13559-102-010	SWITCH-TACT ; JIP1236A 160G	5	
SW6, 7, 8	13559-901-130	TACT SWITCH ; SKHTLA021A	3	
FB1, 2, 3	14049-033-420	FERRITE BEAD ; INDVCTOR 3857S TAPE	1	
X601	14534-504-040	CERAMIC-RESONATOR ; CSA4.00MG	1	
X401	14539-401-050	X-TAL ; HC 18U 16.9344 MHz	1	

4. GENERAL SECTION

1) AC 110V/220V UNIT

LOCATION No.	CODE No.	DESCRIPTION & SPECIFICATION	Q'TY	REMARK
P/T	12869-222-930	TRANS POWER ; EI85.8 x 48 SCM8900 110/220V	1	⚠
FUSE 2	14709-241-220	FUSE ; T 250V 1.25A 20EUR SLOW	1	⚠
FUSE 1	14709-441-262	FUSE ; T 250V 2.5A 20EUR	1	⚠
	13599-501-060	VOLTAGE SELECTOR ; 00120603 1C-2P 120/220V	1	⚠
	13059-808-246	POWER CORD ASSY ; KKP-4 19C/B-161 W/S 220M/M	1	⚠EXP (CP2)

2) AC 120V UNIT

LOCATION No.	CODE No.	DESCRIPTION & SPECIFICATION	Q'TY	REMARK
P/T	12869-222-940	TRANS POWER ; EI85.8 x 48 SCM8900 120V (UL)	1	⚠ UL
P/T	12869-222-950	TRANS POWER ; EI85.8 x 48 SCM8900 120V (CSA)	1	⚠ CSA
	13053-806-313	POWER CORD ASSY ; KKP-10 SPT-1 # 18 7FT 220M/M W/S	1	⚠ Non-Poralized
	13059-808-301	POWER CORD ASSY ; KKP-8W SPT-2 7FT 270M/M W/S	1	⚠Poralized
FUSE 1	14709-441-262	FUSE ; T250V 2.5A 20EUR	1	⚠

3) AC 230V UNIT

LOCATION No.	CODE No.	DESCRIPTION & SPECIFICATION	Q'TY	REMARK
P/T	12869-222-910	TRANS POWER ; EI85.8 x 48 SCM8900 230V	1	⚠
	13059-808-246	POWER CORD ASSY ; KKP-4 19C/B-161 W/S 220M/M	1	⚠EXP (CP2)
FUSE 2	14709-241-220	FUSE ; T250V 1.25A 20EUR SLOW	1	⚠

■ ABBREVIATION LIST

AC	:	Alternating Current
Addr	:	Address
ADJ.	:	Adjustment
AGC	:	Automatic Gain Control
ALC	:	Automatic Level Control
AM	:	Amplitude Modulation
AMP	:	Amplifier
AMPS	:	Automatic Music program Search
ANT.	:	Antenna
ASSY	:	Assembly
BAL	:	Balance
BLK	:	Black
BLU	:	Blue
BPF	:	Band Pass Filter
BRKT	:	Bracket
CF	:	Ceramic Filter
ch, CH	:	Channel
cm	:	centimeter
COM	:	COMnon
CON MIC	:	Condenser Microphone
D	:	Depth
D/A Convertor	:	Digital/Analog Convertor
dB	:	deciBel
DC	:	Direct Current
DEC	:	Decoder
DET	:	Detector
DEV	:	Deviation
DSP	:	Digital Signal Processor
DTS	:	Digital Tuning System
EA	:	Each
E-HEAD	:	Erase Head
EQ	:	Equalizer
FF	:	Fast Forward
F/F	:	Flip Flop
Fig.	:	Figure
FM	:	Frequency Modulation
FREQ.	:	Frequency
GND	:	Ground
GRN	:	Green
GRY	:	Gray
H	:	Height, High
Hz	:	Hertz
IC	:	Integrated Circuit
IF	:	Intermediate Frequency
IFT	:	Intermediate Frequency Transformer
I/O	:	Input/Output
KHz	:	Killohertz
Kg	:	Kilogram
L	:	Left, Low
LCD	:	Liquid Crystal Display
LED	:	Light Emitting Diode
LPF	:	Low Pass Filter
LW	:	Long Wave
Max	:	Maximum
MHz	:	Megahertz
min	:	Minimum
MOD	:	Modulation
MPX	:	Multiplex
MW	:	Medium Wave
NF	:	Negative Feedback
OP AMP	:	Operational Amplifier
ORG	:	Orange
OSC	:	Oscillator
PB	:	Playback
PCB	:	Printed Circuit Board
PLL	:	Phase Lock Loop
P/T	:	Power Transformer
R	:	Right
RAM	:	Random Access Memory
REC	:	Record
REG	:	Regulator
REW	:	Rewind
RF	:	Radio Frequency
ROM	:	Read Only Memory
R/P	:	Record/Play
sec	:	Second
SSG	:	Standard Signal Generator
SSP	:	Serro Signal Processor
ST	:	Stereo
ST/EJT	:	Stop/Eject
SW	:	Switch, Short wave
TP	:	Test Point
TR	:	Transistor
TRANS	:	Transformer
V	:	Volt
VIO	:	Violet
VCO	:	Voltage Controlled Oscillator
VOL	:	Volume
Vpp	:	Voltage peak to peak
VR	:	Volume
Vref	:	Reference Voltage
V/SEL	:	Voltage Selector
VTVM	:	Vaccum Tube Volt Meter
VVC	:	Voltage Variable Capacitance
W	:	Watt, Weight
WHT	:	White
X	:	Crystal
YEL	:	Yellow